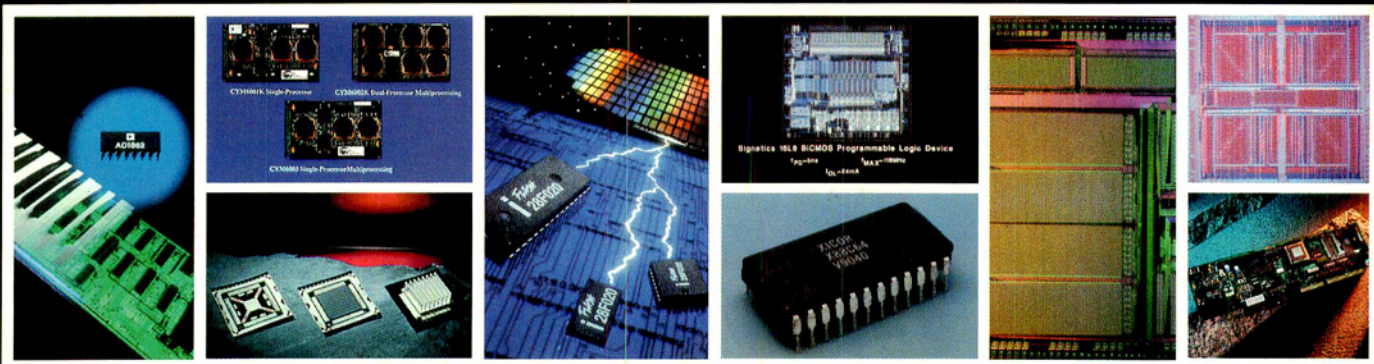


1992 IC MASTER



1. Selection Guides & Function Index

■ Master Selection Guide Function Index

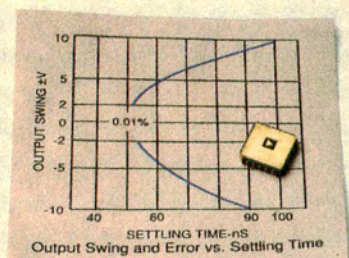
MASTER SELECTION GUIDES

- Digital
- Digital Signal Processing
- Microprocessor
- Microprocessor Development Systems
- Interface
- Linear
- Memory
- ASIC/Custom
- Programmable Logic Devices
- Chip Sets and Multifunction



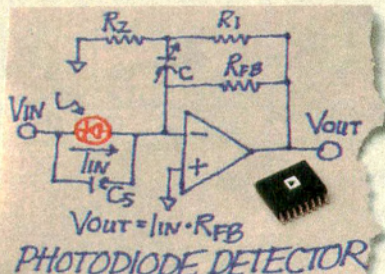
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Whether you fax it, fire it, send it, measure it, wire it, compute it, The Analog family of



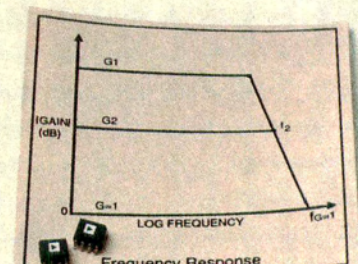
Precision

With the AD840, AD841 and AD842, there's no need to trade speed for accuracy. All three settle to 0.01% within 100 ns (840/842) and 110 ns (841) – critical in data acquisition and instrumentation applications – and offer low offset voltages and drifts, and fast slew rates.



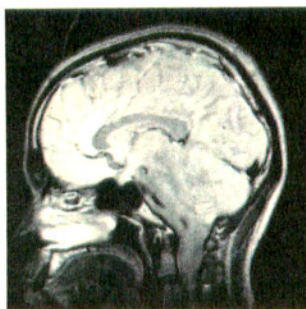
FET Input

For op amps requiring low input current, the OP-42, OP-44, AD845 and AD843 are all remarkably fast – slew rates are 58, 120, 100 and 250 V/ μ s, respectively. In addition, they offer offset voltages of less than 1 mV and extremely low current noise.



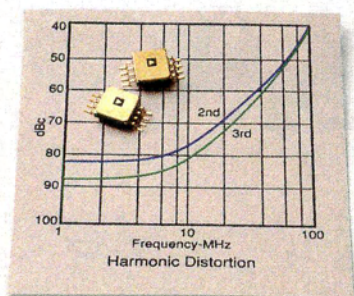
Transimpedance Amplifiers

The OP-160, OP-260, AD844, AD846, AD9617 and AD9618 all utilize a current feedback architecture to achieve slew rates from 450 to 2000 V/ μ s without compromising stability – even in hostile environments. Other benefits include low power dissipation and high unity-gain bandwidth.



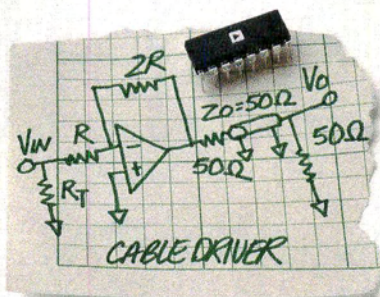
If whatever it is you're trying to do involves high-speed op amps, Analog Devices is the company to call. With our current products and new introductions, we have the broadest line of high-speed op amps available. A line that gives you the right combination of speed, precision, noise and price. So chances are, we've got exactly what you need for

shoot it, launch it, land it, test it, display it or air it, we've got it. high-speed op amps.



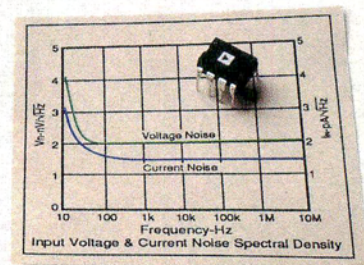
Buffers

If you're looking for extremely low distortion buffers, look at the specs of the AD9620 and AD9630 – distortion at 20 MHz: – 73 dBc and – 66 dBc, respectively; fast settling time: less than 8ns to 0.02%; and extremely low noise: 2.2 nV/√Hz.



General Purpose

With the right combination of speed, precision, power dissipation and high output drive capability, the AD827, AD829, AD847, AD848, AD849 and OP-64 are ideal general purpose solutions. And they're ideally priced solutions – most singles are under \$3, and duals are under \$5.



Low Noise

It used to be you had to choose between speed or low noise. But with the AD829, you get both. It features voltage noise of 2 nV/√Hz and current noise of 1.5 pA/√Hz with a 50 MHz unity-gain bandwidth. Those specs, combined with the low price of \$2.95/100s, make it ideal for both audio and video applications.



whatever application you're working in. Call us at 1-800-262-5643, or write to Analog Devices, P.O. Box 9106, Norwood, MA 02062-9106, for a complete high-speed op amp selection guide and a free copy of our SPICE model library.



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Volume 1

Analog Devices ... (Inside Front Cover)	
NuHorizons	
..... (Opposite Table of Contents)	
Contents	1
IC MASTER Staff	2
How to use the IC MASTER	2
Abbrev. of Company Names	6
Editorial Advisory Board	8
Master Selection Guide	
Function Index.....	9

Digital Selection Guide	101
Digital Signal Processors	251
Microprocessor Selection	
Guide	301
American Arium	450
Microprocessor Development	
Systems	451
Interface Selection Guide	501
Linear Selection Guide.....	701
Dense-Pac Microsystems	900

Memory Selection Guide	901
Stanford Telecom	1200
ASICs/Custom	
Selection Guide.....	1201
Data I/O	1300
Programmable Logic Devices ...	1301
Chip Sets and Multifunction	
Devices	1401
International Distributors	
..... (Facing Inside Back Cover)	

Volume 2

Hyundai (Inside Front Cover)	
NuHorizons	
..... (Opposite Table of Contents)	
Contents	2001
IC MASTER Staff	2002

How to use the IC MASTER ...	2002
Abbrev. of Company Names ...	2006
Editorial Advisory Board	2008
Part Number Guide	2011
Part Number Index	2101

Military Parts Directory	2401
Lansdale Semiconductor	2500
Alternate Source Directory	2501
Application Note Directory	2901

Volume 3

KOH Electronics ... (Inside Front Cover)	
Contents	3001
IC MASTER Staff	3002
How to use the IC MASTER ...	3002
Abbrev. of Company Names ...	3006
Editorial Advisory Board	3008
Manufacturers and Distributors	
Directory	3009
Advertisers Data Pages	
Actel	3300
Adaptec	3306
Advanced Analog	3307
Analog Devices	3309
Apex Microtechnology	3377
Array Microsystems	3382 *
AT&T	3386
Brooktree	3404
Burr-Brown	3408
Catalyst Semiconductor	3424
Cirrus Logic	3426
Cypress Semiconductor	3430
Dallas Semiconductor	3439
Datel	3440
Dense-Pac Microsystems	3447
Electronic Designs Inc.	3463

Fujitsu Microelectronics	3467
Gennum Corp.	3493
Gould AMI	3498
Harris Semiconductor	3505
Hyundai Electronics.....	3531
Ideal Semiconductor	3532
Intel	3536
ICT, Inc.	3544
Krueger Company	3548
Lansdale Semiconductor	3549
Lattice Semiconductor	3561
LSI-CSI	3562
LSI Logic	3566
Micrel	3573
Micro-C	3578
Micron Technology	3579
Mitsubishi Electronics	3583
NEC	3589
Newbridge Microsystems	3593
NJR Corp.	3594
NMB Semiconductor	3596
OKI Semiconductor	3598
Performance Electronic	
Packaging	3610

Quality Semiconductor	3611
Rochester Electronics	3615
Rohm	3616
Scorpion Semiconductor	3620
Seiko Instruments	3621
Sharp	3623
Signetics/Phillips	3628
Siliconix	3679
Silicon Systems.....	3683
Simtek	3689
S-MOS	3693
Sony	3694
Stanford Telecom.....	3703
Synergy Semiconductor	3705
Teledyne Components	3713
Toshiba America	3718
Universal Semiconductor	3737
Vitellic	3739
VLSI Technology	3741
Waferscale Integration	3750
Western Design Center	3754
Xicor	3755
Xilinx	3785

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HOW TO USE THE IC MASTER

The 1992 edition of the **IC MASTER** is arranged in three volumes. Each volume serves a specific purpose to help you find the integrated circuit or related product you need. The table of contents on page 1 describes what is in each volume. The table also includes the starting page number for each advertiser.

The **IC MASTER** is a functional work. You know what you need. The **MASTER** helps you find it.

Here are typical problems.

Q. What kinds of functions does the MASTER cover?

A. Turn to page 10 in Volume One. Here is a complete list of the devices covered. The page and line numbers refer you to the exact Section in which a particular function appears.

Q. Who makes a 16384 x 1 static RAM with an access time of 70 ns or faster? What are my technology choices?

A. Pick up Volume 1. Turn to the **MEMORY** section. The first page of the section tells you where the listings of your device begin. See this under:

Static RAMs — General Purpose
Modules
Multiport
NOVRAMs
Cache RAMs

Turn to Static RAMs — General Purpose.

In the first column you see the Organization. Browse through the pages until you reach the 16384 x 1 listings. Now look through the listings until you find the access time and characteristics you need. Device numbers are shown by manufacturer. The device numbers of advertisers in the 1992 **IC MASTER** appear in bold face. The page number following the device number is where additional information may be found in Volume Three. At the extreme right you will see line numbers. These are the specific lines where a device appears.

Q. Which microprocessors are listed in the MASTER? How do I find the microprocessor I need?

A. All commercially available microprocessors are listed in the **MASTER**. Start with the **microprocessor** listing in the **Master Selection Guide Function Index** (starts on page 10). Here you will find the various kinds of products you will need listed according to function. Turn to the various pages shown and then to the advertisers' page where more detail may be available.

Q. Who makes a Dual, Low Offset Voltage Op Amp?

A. This is a **LINEAR** device. Turn to the LINEAR section in Volume One. The first page of the section shows the starting page for each type of device. Turn to the page where Dual Units appear. Look down the list for the device you need. Advertisers' devices are listed in bold face. Turn to the page in Volume Two where more information may be available.

Q. I need an IC with Music capability. Which Master Selection Guide should I use?

A. Turn to the **Master Selection Guide Function Index** starting on page 10. Look through the list until you find **Music**. The page numbers for each kind of device are shown.

Q. I plan to use a digital gate array or some other semicustom ASIC in my next project. Where do I find it in the MASTER? Who makes these things?

A. Turn to Volume One. Turn to the first page of **ASICs/Custom**. Find Gate Arrays and all of the other devices listed here. Now you can find the device you need. After you find the type of device you need, turn to the proper page and find the manufacturer. Advertisers' pages are in Volume Three.

Q. I know the digital IC I need is available. Is it available in a surface mount package?

A. There are two ways to solve this problem. If you know the manufacturer's device number, turn to the Part Number Index in Volume Two. Find the basic number and the page number and line where that device is listed in the MASTER. Turn to that page. If the device is available for surface mounting, an open diamond symbol will appear. You can also turn directly to the digital section and turn to the function of the device you want. The symbol will indicate an SMD is available.

Q. I am looking for an application note on a specific device. Where can I find out if one is currently available?

A. Pick up Volume Two. Turn to the Application Note Directory. Here you will find app notes arranged by **function**. Find the function involved and turn to the page where the app note is listed.

Q. We need a device that meets MIL standards. Where do I look in the MASTER?

A. Turn to the MILITARY section in Volume Two. The Military Device Testing table shows which manufacturers do what kinds of MIL work. Followed by the MIL-STD-1562R directories for microcircuits which contains numerous tables relating to various standards of classification. Additional information is often supplied by the advertisers' pages in Volume Three.

Q. I know the basic part number is 2502 and that's all I know. Where do I look?

A. That's easy in the MASTER. Turn to the Part Number Index. All prefixes and suffixes have been stripped away. Turn to the page where 2502 appears. All manufacturers with that kind of number appear in order along with the page and line number where the device is described.

Q. How many manufacturers claim to make a pin-for-pin and function-for-function equivalent to a Motorola MC68000?

A. Turn to the Alternate Source Directory in the back of Volume Two. Turn to Motorola's listings. Those manufacturers who claim to be equivalent are listed in order. If you have an IBM or Compatible computer with a hard drive, you can get the 1992 IC MASTER **Alternate Source Directory** on a disk. The disk is Clipper compiled from dBaseIII+ and is delivered compressed by PKARC. This is the complete list of alternate sources and allows you to add notes such as your own part numbers, prices, sources and the like. Call Hearst (516) 227-1300 and ask for Book Sales for further information.

Q. I looked in the Alternate Source Directory. The part I want an alternate source for isn't listed. Why not?

A. Are you sure you looked through the entire listing for the original manufacturer? Some devices may be listed in odd ways depending on how the MASTER's editors receive the information. Then there is the probability that no other manufacturer makes an exact replacement for your part. It is important for you to understand how the Alternate Source Directory is compiled. Manufacturers supply the information that **their** part is an exact replacement for **another** part. The original manufacturer does **not** tell us his part can be replaced by those listed.

Q. What do the manufacturers' part numbers mean? I have a Signetics N8X02N. What do all the letters and numbers mean?

A. Look in Volume Two for the Part Number Guide. Turn to the Signetics portion. Now you know the **N** prefix means, zero to plus seventy degrees Centigrade. The **N** suffix indicates the package style. The numbers and letters in the middle are the device type. Each manufacturer has a different code system. Understanding the systems is a great help in comparing devices.

Q. I found the device I want in the MASTER. What are the pinouts? Where can I get more details? Where can I get a price? What is the delivery time?

A. You have just defined exactly what the IC MASTER does. The MASTER is a guide to tell you which devices are available on a commercial basis. After you know this, the next step is to contact the manufacturer, a local sales office or a distributor.

Q. Where can I find the addresses and telephone numbers of manufacturers, local sales offices and distributors?

A. Pick up Volume Three. Turn to the Manufacturers and Distributors Directory. Read the first page. The information on this page will help you understand why the information in the Directory is so important. It will save time and aggravation.

Q. I just saw a new device advertised in Electronic Products magazine. It isn't listed in the MASTER. Why not? When will it be listed?

A. Preparing the information for the annual IC MASTER is a tremendous undertaking. It requires the cooperation of every single manufacturer. All of the material must be organized, cross referenced and placed in the data base. This data base must be closed off in November in order to meet the publishing date of late January. That is why some devices are not listed. They came on the market too late for the deadline. There are two updates to the annual MASTER. They are called the **IC MASTER UPDATE**. One is issued in the late Spring and the other in the early Fall. Be sure to sign up for copies when you get your new IC MASTER. If you are not sure whether or not you have requested the updates, please write to the Circulation Department at the address shown on page 2 of this MASTER. Be sure to indicate which edition of the MASTER you are using.

ABBREVIATIONS OF COMPANY NAMES

Acculin	Acculin, Inc.	Commodore	Commodore Semiconductor Group	Hughes	Hughes Aircraft Co.
Actel	Actel Corporation	Cornes USA	Cornes U.S.A. Ltd.	Hyundai	Hyundai Electronics America
Adaptec	Adaptec	Crystal	Crystal Semiconductor Corp.	IC DESIGNS	IC DESIGNS
Adv Analog	Advanced Analog	CustomArrays	Custom Arrays Corp.	IC Sensors	I C Sensors, Inc.
AHA	Advanced Hardware Architectures, Inc.	Cybernetic	Cybernetic Micro Systems	Ideal Semi	Ideal Semiconductor
AdvLinear	Advanced Linear Devices	Cypress	Cypress Semiconductor Corp.	ILC-DDC	ILC Data Device Corp.
AMD	Advanced Micro Devices, Inc.			InfoChip Sys	InfoChip Systems, Inc.
AEG Corp	AEG Corporation-Telefunken			Inova	Inova Microelectronics Corp.
Allegro Micro	Allegro Micro Systems, Inc.	Dallas	Dallas Semiconductor	IntCirSys	Integrated Circuit Systems, Inc.
Altera	Altera Corporation	Data I/O	Data I/O Corporation	IDT	Integrated Device Technology, Inc.
Am Arlun	American Arlun	Datel	Datel, Inc.	Int Info Tech	Integrated Information Technology, Inc.
AD	Analog Devices	Dense-Pac	Dense-Pac Microsystems, Inc.	ILSI	Integrated Logic Systems Inc.
Analog Micros	Analog Microsystems	Dionics	Dionics Inc.	IntMeasSys	Integrated Measurement Systems
AnalogSys	Analog Systems	DSP Group	DSP Group, Inc.	ISSI	Integrated Silicon Solution Inc.
Analogic	Analogic Corporation			Intel	Intel Corporation
Apex	Apex Microtechnology Corporation	ECI Semi	ECI Semiconductor	Interface Tech	Interface Technology, Incorporated
AMCC	AMCC (Applied Micro Circuits Corporation)	EdsunLabs	Edsun Laboratories, Inc.	Intergraph	Intergraph
AppMicroSys	Applied Microsystems Corporation	EG&G-Reticon	EG&G Reticon Corporation	ICT	International CMOS Technology
Aptek	Aptek Microsystems	Elantec	Elantec, Inc.	IMI	International Microcircuits, Inc.
Array Micro	Array Microsystems	EDI	Electronic Designs Inc.	IMP	International Microelectronic Products
Aspen	Aspen Semiconductor Corp.	Ericsson	Ericsson Components	Interpoint	Interpoint Corporation
Astec Semi	Astec Semiconductor	Exar	Exar Corporation	Intronics	Intronics, Inc.
AT&T	AT&T Microelectronics, 52AL330240	EXEL	EXEL Microelectronics, Inc.	IXYS	IXYS Corporation
ATMEL	ATMEL Corporation			Krueger	Krueger Company
AutoSys	ASI	Fujitsu	Fujitsu Microelectronics, Inc.	Lansdale	Lansdale Semiconductor
Avasem	Avasem Corporation			Lattice	Lattice Semiconductor Corp.
		Gall	Gall! Motion Control	Level One	Level One
Benchmark	Benchmark Microelectronics	GEC Plessey	GEC Plessey Semiconductors	Lin Int Sys	Linear Integrated Systems
Bipolar	Bipolar Integrated Technology	Gennum	Gennum Corporation	LinearTech	Linear Technology Corporation
Brooktree	Brooktree Corporation	GET Eng	GET Engineering Corp.	LogicAuto	Logic Automation Incorporated
Burr-Brown	Burr-Brown Corporation	GoldStar	GoldStar Technology, Inc.	LogicDev	Logic Devices Inc.
		Gould AMI	Gould AMI	LSTI	Logical Solutions Technology Inc.
C&C Tech	C & C Technology Inc.	Greenwich	Greenwich Instruments USA	LSI Comp	LSI Computer Systems, Inc.
Catalyst Rsch	Catalyst Research			LSI Logic	LSI Logic Corporation
Catalyst Semi	Catalyst Semiconductor	Harris	Harris Corporation	Macrochip	Macrochip Research
CE Infosys	CE Infosys of America, Inc.	Headland	Headland	Maxim	Maxim Integrated Products
Cermetek	Cermetek Microelectronics, Inc.	Heurikon	Heurikon Corporation	MCE	MCE Semiconductor
Cherry Semi	Cherry Semiconductor Corporation	HP	Hewlett-Packard-Logic Systems Division	Micrel	Micrel
Chips&Tech	Chips and Technologies, Incorporated	HiLevel	HiLevel Technology, Inc.		
Cirrus	Cirrus Logic, Inc.	Hitachi	Hitachi America, Ltd.		
CMD Micro	California Micro Devices Corporation	Holt	Holt, Integrated Circuits, Inc.		
Comlinear	Comlinear Corporation	Honeywell	Honeywell		

MicroLinear	Micro Linear	Ramtron	Ramtron Corporation	Teltone	Teltone Corporation
MicroNet	Micro Networks Company	Raytheon	Raytheon Company	TI	Texas Instruments, Inc.
MicroPwr	Micro Power Systems, Inc.	Ricoh	Ricoh Corp.	Thaler	Thaler Corp
Micro-C	Micro-C	Rochester	Rochester Electronics Incorporated	ThirdDomain	Third Domain, Inc.
Micro-Comp	Micro-Comp Industries	Rockwell	Rockwell International	TLSI	TLSI Incorporated
Micro-Rel	Micro-Rel	ROHM	ROHM Corporation	Toko	Toko America Inc.
Microchip	Microchip Technology, Inc.			Toshiba	Toshiba America Electronic Components, Inc.
Microcosm	Microcosm Inc.	S-MOS	S-MOS Systems, Inc.	TranSwitch	TranSwitch Corporation
MicronTech	Micron Technology, Inc.	Samsung	Samsung Semiconductor, Inc.	Trident Micro	Trident Microsystems Inc.
Micropac	Micropac Industries, Inc.	Sanyo	Sanyo Semiconductor Corporation	TriQuint	Tri Quint Semiconductor
Mitel	Mitel Semiconductor	Scorpion Tech	Scorpion Technologies, Inc.	TRWLSI	TRWLSI Products Inc.
Mitsubishi	Mitsubishi Electronics America, Inc.	SEEQ	SEEQ Technology, Incorporated	Tseng Labs	Tseng Labs, Inc.
Mosaic Semi	Mosaic Semiconductor, Inc.	Seiko Instr	Seiko Instruments USA, Inc.		
Mosel	Mosel	Semi-Shield	Semi-Shield	UMC	Unicorn Microelectronics Corp.
Motorola	Motorola Semiconductor Products	SemTech	Semtech Corpus Christi	UTMC	United Technologies Microelectronics Center
MX-COM	MX-COM, Inc.	SGS-Thomson	SGS-THOMSON Microelectronics, Inc.	Unitrode	Unitrode Integrated Circuits Corp.
		Sharp	Sharp Electronics Corporation	Universal	Universal Semiconductor Inc.
		Siemens	Siemens Components, Inc.	USAR Systems	USAR Systems, Inc.
National	National Semiconductor Corporation	Sierra	Sierra Semiconductor Corporation		
NCM	NCM Corporation	Signal Proc	Signal Processing Technologies	Vadem	Vadem
NCR	NCR Corporation	Signetics	Signetics Company	Vanguard Semi	Vanguard Semiconductor
NEC	NEC Electronics Inc.	Sil Composers	Silicon Composers, Inc.	Vertex	Vertex Semiconductor Corp.
Newbridge	Newbridge Microsystems	Silicon Conn	Silicon Connections Corp.	VIA Tech	VIA Technologies, Inc.
Nexel	Nexel Corporation	SiliconG	Silicon General Semiconductors	Vitellic	Vitellic
NJR	NJR Corporation	SiliconSys	Silicon Systems Inc.	Vitesse	Vitesse Semiconductor Corp.
NMB	NMB Technologies	Siliconix	Siliconix Inc.	VLSI Tech	VLSI Technology Inc. (VLSI)
		Simtek	Simtek Corporation	VTC	VTC Inc.
Oak Technology	Oak Technology, Inc.	Sipex-HSD	Sipex Corporation		
OKI	OKI Semiconductor, Inc.	Smart Modular	Smart Modular Technologies	Waferscale	Waferscale Integration Inc.
OnChip Sys	OnChip Systems, Inc.	Solarise	Solarise Enterprises Inc.	Weitek	Weitek Corporation
OEI	Optical Electronics Inc.	Soltron	Soltron Devices, Inc.	WDC	The Western Design Center, Inc.
Optimum Semi	Optimum Semiconductor	Sony	Sony Corporation of America	Western	Western Digital Corporation
Orion	Orion Instruments, Inc.	Sophia	Sophia Systems	White Tech	White Technology, Inc.
		SpaceResearch	Space Research Technology, Inc.		
Panasonic	Panasonic Industrial Company/Electronic Components Division	Spancom	Spancom Corporation	XECOM	XECOM, INC.
Paradigm	Paradigm Technology, Inc.	Stac	Stac Electronics	Xicor	Xicor, Inc.
Peps	Performance Electronic Packaging Services	SMC	Standard Microsystems Corporation	Xilinx	Xilinx Corp.
Performance	Performance Semiconductor Corp.	STEL	Stanford Telecommunications Inc.		
Phylon Inc.	Phylon Inc.	Startech	StarTech Semiconductor, Inc.	Yamaha	Yamaha Systems Technology
Plus Logic	Plus Logic	STC	STC Components		
PLX Tech	PLX Technology, Inc.	Sunshine	Sunshine Semiconductor Inc.	ZAX	Zax Corp.
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Proximity	Proximity Technology Inc.	Synergy	Synergy Semiconductor Corporation		
		Systronix	Systronix, Inc.		
Qualcomm	Qualcomm Incorporated	Technitrol	Technitrol, Inc.		
Quality Semi	Quality Semiconductor	Tektronix	Tektronix, Inc.		
		TeledyneC	Teledyne Components		

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MASTER SELECTION GUIDE FUNCTION INDEX

(Guide to Product Categories)

When you know the desired function and need specific devices that perform this function, use this Index first. It is organized by functions and by key words. It leads to the page-line reference for that specific device and also related devices.

The Master Selection Guides that follow in Volume One provide sufficient information to help you make an initial product selection, or to lead you to a group of device numbers and their manufacturers. They enable you to find the products most likely to satisfy your needs for a particular application.

All devices that appear in a selection guide are included in the **Part Number Index**. If you know the part number for a device, by referring to the Part Number Index, you can see the page and line number for data on that device. If the manufacturer of the device has included a data sheet in IC MASTER, the location of this data sheet is also shown in **boldface** type.

IC MASTER

Function	Page-Line	Function	Page-Line
A		Amplifiers (Cont'd)	
A/D Converters		Power Auto	717-2
Binary	510-2	Preamplifier	716-51
Decimal	541-1	Programmable Gain	704-25
A Law	809-70	Remote Control	720-38
Accompaniment		Sense	612-74
Music	717-112	Transconductance	761-24
Accumulator			772-24
See Digital-Arithmetic, Various Sections		Video	704-48
ADC		Voltage Controlled	
Binary	510-3	Consumer	717-112
Decimal	541-1		
DSP	258-114	Analog Switches	
Microprocessor		See Switches	
6500	346-45	Analog to Digital Converters	
Video	510-3	Binary	510-3
Adder	See Digital-Arithmetic, Various Sections	Decimal	541-1
ADPCM	720-114	Application Notes	
AFT	TV	See Application Note Section	
AGC		ARINC 429	
Amplifier	702-3	Digital CMOS	143-5
Recorder	721-37	Interface	
TV	721-77	Line Drivers	589-34
Alarm Circuits		General	367-20
General	821-74	Microprocessor	
ALC	Recorder	32	358-71
Alternate Sources		8000	355-73
See Alternate Source Directory		Arithmetic Functions	
Alternator Voltage Regulator		See Digital-Arithmetic, Various Sections	
Automotive	717-2	Arithmetic Game	367-20
ALU	Digital ECL 100K	Arithmetic Logic Unit	
Amplifiers		See Digital-Arithmetic, Various Sections	
Antilog	703-91	Arrays	
Cassette Recorder	721-37	Linear/Digital	1254-2
	721-77	Transistor	705-1
Current Followers	727-19	ASICs/Custom	
Darlington	705-1	See ASICs/Custom Listings	
Differential	702-90	Attenuators	
Headphone	714-6	Digital Consumer	714-32
Hearing Aid	714-7	Electronic	
IF		Consumer	717-112
AM	718-56	Audio	See Linear-Consumer Circuits
AM/FM	718-90	Automotive Circuits	717-2
FM	719-58		
TV	722-89	B	
Instrumentation	702-124	Bar Code Processor	367-20
IR	720-38	Bargraph Display Drivers	
Isolation	703-58	See Interface-Display Drivers Section	
Log	702-33	Battery Backup Circuit	368-70
MATV	721-77	Battery Charger	
Microphone	721-37	Automotive	717-23
Operational		Baud Rate Generator	
See Operational Amplifier listings	(Continued)	Digital Special	194-1
		Bell 103/212	
		See Linear-Telecommunications Section	

MSG FUNCTION INDEX

Function	Page-Line	Function	Page-Line
B	(Cont'd)	Clock	(Cont'd)
Bilingual Processor		Automotive	717-2
TV	721-77		717-5
BiSync Microprocessor		Microcomputer	369-17
9900	355-23		367-20
Bit Rate Generator		Microprocessor	
Digital CMOS	143-5	Real-Time	367-20
Boosters Current Followers	727-19		345-21
Bounce Eliminator		Oscillators/Dividers	139-168
Digital CMOS	143-5		
Bubble Memory		Code Identification System	
Control Circuits	602-2	Digital CMOS	143-5
Controller	359-40	Codecs DSP	260-54
Driver	602-2	Color Processor	
Interface Circuits	602-2	TV	724-106
Buffers See Digital-Buffers, Various Sections		Communications Processor	
Burst Error Processor		Microprocessor	
General	585-1	TMS380	357-10
	367-20	Comandor	
Microprocessor		Tape Recorder	
8000	355-73	Audio	721-37
Bus See Line Circuit listings		Comparator/Multiplexer	
C		Digital Special	194-1
Camera Circuits	717-42	Comparators	
Traffic	721-77	Address	102-13
TV	721-99	Digital ECL 100K	153-66
Cassette See Tape Deck Circuits			156-20
CATV	721-77	ECL10K	150-1
CB Radio	717-47	HNIL/HTL	159-1
	780-2	Equal to Microprocessor	355-73
CCITT Protocol Controller	359-40	Equality	102-13
CCITT V.24			102-95
Interface		Identity TTL	160-46
Line Drivers	587-1	Linear Dual	710-2
CCITT V.26			710-2
Interface		PLLs	780-2
Line Drivers	587-1	Quad	712-23
CCITT V.28		Single	708-1
Interface			708-1
Line Drivers	587-1	Linear-Digital	191-42
Cellular Radio		Magnitude	
Receivers	720-7	CMOS	102-13
Channel Circuits			103-68
TV	721-77	Phase Digital	143-5
Channel Selector		Linear	780-32
CB Radio	717-47		780-2
Chip Sets and Multifunction Devices		String Proximity	359-40
See Chip Set and Multifunction Section			
Chroma Circuits			
TV	721-103		
(Continued)			

IC MASTER

Function	Page-Line	Function	Page-Line
C	(Cont'd)		
Computer		Controller	(Cont'd)
String Proximity	359-40	Stepper Motor	609-41
Consumer Circuits		Video General	365-105
Automotive	717-2		355-23
Camera	717-42	Winchester	366-8
CATV	721-77	Controls	
CB Radio	717-47	Motor Speed	
Game	724-106	General	825-38
Music	717-112	Recorders	721-37
Organ	717-112	Remote	720-36
Radio AM	718-54	SCR	828-12
Remote Control	720-38	Converter	
Speech	720-114	BCD to Binary	191-42
Tape Recorder		Flash	510-3
Audio	721-37	Frequency to Voltage	808-62
Television	721-77	RMS to DC	806-113
Video Game	724-106	See A/D Converter Listings	
Contact Bounce Eliminator	191-42	See D/A Converter Listings	
Controller		Voltage to Frequency	808-25
ACIA Microprocessor	346-45	Coolant Automotive	717-2
Bubble Memory	359-40	Correlator	
Cassette General	359-40	Digital Special	194-1
CCITT	359-40	Count Extender	
Color Generator		for Prescalers	780-2
Microprocessor	345-21	Counter Logic Control	780-2
CRT See CRT Listings	359-40	Counters	
Display General	359-40	See Digital-Counters, Various Sections	
Microprocessor	343-48	CQUAM	718-54
	345-21	CRC ECC Circuits	585-1
Dynamic RAM	602-52	TTL	191-42
Floppy Disk		Winchester	359-40
General	370-74	Crosspoint	
Microprocessor	355-73	See Switches	
	353-153	CRT Circuits	359-40
	355-23	CRT Controller	
GPIO	359-40	General	359-40
LCD/Console	359-40	Microprocessor	
Local Network	143-5	3870	345-152
Mini-Floppy Disk	361-124	6500	346-45
Mini-Floppy-Disk		8000	355-73
Microprocessor	346-45	9900	355-23
Printer General	364-39	CRT Interface	
	359-40	General	359-40
Microprocessor	346-45	CRT Videotext	359-40
Priority Interrupt	372-49	Current Boosters	
SMD	359-40	Followers	727-19
	(Continued)	Current Sensing Gate	191-42

Function	Page-Line	Function	Page-Line
C	(Cont'd)	Delay Element	191-42
Current Source		Delay Lines	
Constant	822-33	Digital CMOS	121-161
D		Delta Modulation	
D/A Converter		Consumer	720-116
General	542-1	Telecom	811-13
Video General	542-10	Demultiplexer	
DAC		Analog CMOS	143-5
DSP	258-114	Switches	506-70
Microprocessor		Digital CMOS	119-99
General	367-20	Deskew Register	585-1
RGB	359-40	Detector	780-2
Video DSP	258-114	Level	824-122
Darlington	605-1	Phase-Frequency	191-42
	705-1	Proximity	826-132
DART Microprocessor		Smoke	828-37
Z80	352-118	SSB	718-54
Data Acquisition		Device Identification	
Controller	605-1	See Part Number Guide	
Microprocessor		Numbers	
General	367-20	See Part Number Index	
Systems	822-119	Prefixes	See Part Number Guide
Data Encryption		Suffixes	See Part Number Guide
Digital Special	194-1	Digital BICMOS	
Microprocessor		Arithmetic Functions	147-1
General	369-76	Buffers	147-17
8000	355-73	Bus Oriented Circuits	147-89
9900	355-23	Decoders	147-122
Data Path Switch	102-13	Flip-Flops, D-Type	148-11
Data Selector		Gates, AND	148-43
See Multiplexer listings		Gates, Miscellaneous	148-49
Data Separator		Gates, NAND	148-45
Floppy Disk	362-46	Gates, OR	148-47
Decoders		Latches	148-68
CMOS	119-99	Miscellaneous	149-15
	122-11	Shift Registers	148-106
Consumer	720-38	Transceivers, Bus	148-119
Display Drivers	580-1	CMOS	
ECL 10K	150-54	Arithmetic Functions	102-69
HNIL/HTL	159-20	Buffers	105-56
	159-18	Counters, Binary	114-95
Keyboard	586-1	Counters, Decade	117-99
Manchester		Counters, Misc.	119-49
See Manchester listings		Decoders	119-99
See also Drivers, Digital		Delay Lines	121-161
See Digital-Decoders, Various Sections		Dividers	139-168
Tone PLL Circuits	780-2	Drivers	122-11
Traffic Information	717-2	Flip-Flops, D	122-117
Deflection Circuit		Flip-Flops, J-K	126-154
TV	722-40		(Continued)

IC MASTER

Function		Page-Line	Function		Page-Line
D		(Cont'd)	Digital		(Cont'd)
Digital	CMOS	(Cont'd)	ECL 10K	Translators	152-83
	Gates, AND	127-172	ECL 100K	Arithmetic Functions	153-66
	Gates, Ex. NOR	132-70		Decoders	153-110
	Gates, Ex. OR	132-1		Drivers	154-37
	Gates, NAND	128-147		Flip-Flops, D	154-56
	Gates, NOR	131-40		Gates, Ex. OR/NOR	154-102
	Gates, OR	130-111		Gates, OR/NOR	154-85
	Inverters	107-146		Latches	154-110
	Latches	132-117		Memories	155-10
	Memories, See Memory listings	135-117		Miscellaneous	156-8
	Miscellaneous	143-5		Multiplexers	155-37
	Multiplexers	136-73		Shift Registers	155-81
	Oscillators	140-1	GaAs	Miscellaneous	158-36
	Shift Registers	140-31	HNIL/HTL	Arithmetic Functions	159-1
	Translators	142-147		Counters, Binary	159-10
DSP	Arithmetic Functions	258-2		Decoders	159-18
	Converters, A/D	258-114		Decoders/Drivers	159-20
	Converters, D/A	258-114		Drivers	159-20
	Miscellaneous	260-54			159-27
	Processors	259-78		Flip-Flops, D	159-31
	Registers	260-37		Flip-Flops, J-K	159-33
ECL III/Misc.	Miscellaneous	157-29		Flip-Flops, R-S	159-40
	Multivibrators	157-28		Gates, AND	159-41
ECL 10K	Arithmetic Functions	150-1		Gates, AOI	159-67
	Buffers	150-30		Gates, Misc.	159-74
	Counters, Binary	150-44		Gates, NAND	159-43
	Counters, Decade	150-51		Gates, NOR	159-71
	Decoders	150-54		Gates, OR	159-70
	Drivers	150-100		Miscellaneous	159-95
	Flip-Flops, D	151-6		Multiplexers	159-79
	Gates, AND	151-29		Multivibrators	159-81
	Gates, Ex. OR	151-84		Translators	159-88
	Gates, Ex. OR/NOR	151-94	Special		194-1
	Gates, NOR	151-43		Buffers	162-5
	Gates, OR	151-36			162-5
	Gates, OR/NOR	151-61		Counters	167-138
	Gates, OR-AND	151-72			168-162
	Gates, OR-AND/Invert	151-78			169-150
	Inverters	150-35			170-85
	Memories	151-123			170-163
	Miscellaneous	152-108		Counters, Binary Count Up	167-138
	Multiplexers	152-30		Counters, Binary Count Up/Down	168-162
	Multivibrators	152-62		Counters, Decade Count Up	169-150
	Shift Registers	152-63		Counters, Decade Count Up/Down	170-85
	(Continued)			(Continued)	

Function	Page-Line	Function	Page-Line
D	(Cont'd)	Direction Indicator	
Digital	TTL	Automotive	717-2
	(Cont'd)	Discriminator	
Counters, Miscellaneous	170-163	Direction	143-5
Decoders	171-11	Window	829-100
Drivers	173-16	Disk	
	173-16	Drivers	603-55
Flip-Flops	174-11	Hard Disk Circuits	362-75
	176-70	Video	721-77
Flip-Flops, D	174-3	Winchester Disk Circuits	359-40
Flip-Flops, J-K	176-70	Display Controller	359-40
Gates	181-37	Display Drivers	
	181-45	Digital CMOS	122-11
	183-107	Electroluminescent	580-49
	183-26	Gas Discharge	580-14
Gates, AND	177-111	General	580-1
Gates, AND-OR	181-37	Lamp	605-106
Gates, AOI	181-44	LCD	580-101
Gates, Ex. NOR	183-107	LED	581-104
Gates, Ex. OR	183-29	OLMS40	343-132
Gates, NAND	178-122	TV Channel	721-102
Gates, NOR	182-56	with Memory	
Gates, OR	181-174	Digital, Special	195-42
Gates, OR/NOR	183-24	Distributors	
Inverters	163-37	See Manufacturers and Distributors Directory	
	163-40	Divider Extender	
Latches	183-136	Digital Special	194-1
	183-136	Dividers	
Memories	185-62	Consumer	717-112
	185-62	Extender Digital, Special	194-66
Miscellaneous	191-42	Fixed Digital	194-1
	191-42		170-163
Multiplexers	186-8	Digital, CMOS	139-168
	186-8	PLL Circuits	780-104
Multivibrators	188-135	Programmable	
Shift Registers	189-23	Digital	143-5
Shift Registers	189-23		170-163
Transceivers, See also Line Circuits	164-59	See Counter listings	
Translators	191-20	Dolby	714-117
	191-20	DRAM	See Memory listings
Digital Bus Circuits		Drivers	
ECL III	157-29	Analog Switch	502-7
ECL 100K	156-20	BCD to Display	580-1
Digital Signal Processors		Bridge	605-1
See Digital Signal Processor Section		Bubble Memory	602-2
Diode Matrix		Bus	See Line Drivers
Programmable		CCD	602-2
Digital	194-1	CMOS	122-11
			143-5
		Disk	602-17
		Display	General
			580-1
		See Display Driver listings	(Continued)

IC MASTER

Function	Page-Line	Function	Page-Line
D	(Cont'd)	Encoder	Consumer 720-38
Drivers	(Cont'd)	Keyboard	
ECL 10K	150-106	General	586-1
100K	154-37	Microprocessor	345-21
Fluorescent	580-1	Manchester	
Hammer	605-106	See Manchester listings	
High Current	605-95	Pulse DTMF	
Digital	173-16	Microprocessor	355-23
High Voltage	605-1	Encryption	
Digital	122-11	See Data Encryption	
HNIL/HTL	159-20	Engine RPM	
	159-18	Automotive	717-24
Lamp	605-106	EPROMs	See Memory listings
Latch/Decoder/Driver	122-11	Error Correction	
LCD	580-102	See ECC	
LED	580-27	Ethernet Circuits	
Line	587-1	General	361-82
Also See Line Circuits	589-34	Exposure	
Memory	602-1	Camera	717-42
MOS Clock	602-2	Fast Fourier Transform	260-54
MOS Memory	602-2		367-20
Motor General	607-40	Fiber Optics	
Peripheral	605-1	Amplifiers	702-111
PIN Diode	605-1	Circuits	823-115
Plasma	580-1	FIFOs	See Memory listings
	605-1	Filters	
Relay	605-1	Bandpass	812-78
Solenoid	605-1	Codec	809-88
Stepper Motors	605-1	Impulse Response, Finite	260-83
Thermal Print Head	605-1	PCM	815-91
TTL	173-16	Speech	816-128
DTMF Telecom	812-41	Switched Capacitor Array	828-51
DUART Transmitters-Receivers	613-71	Transversal	260-54
DVM Circuits	541-12	TV	721-77
Dynamic RAM Controller	602-52	Flash Converter	510-3
E		Flip-Flops	
ECC		See Digital - Flip-Flops, Various Sections	
ECL 100K	156-20	Floating Point	
General	585-1	See Arithmetic listings	
8000	355-73	Floppy Disk	
TTL	191-42	Circuits	361-117
ECC Transceiver		Controllers	
Interface		See Controller listings	
Line Transceivers	596-1	Fluorescent Display Driver	580-1
Electroluminescent Drivers		Followers	727-19
See Display Driver listings		FSK PLL Circuits	780-2
Eliminator		Function Generators	781-92
Contact Bounce	191-42	G	
		Game	
		Arithmetic Game	367-20
		Circuits	724-106

Function			Page-Line	Function			Page-Line
G			(Cont'd)	Generator			(Cont'd)
Gates	AND	Drivers	605-1	Rhythm			717-112
		ECL 10K	151-29		Sound	See Sound Generator listings	
		HNIL/HTL	159-41		Tone	Microprocessor	345-21
	AND-OR	CMOS	130-56		TV Test Pattern		721-77
		TTL	181-37		Waveform		781-104
	AND-OR-Invert	CMOS	130-91	GPIB	General		362-65
		HNIL/HTL	159-67		Microprocessor		
		TTL	181-45		General		359-40
					9900		355-23
Exclusive NOR	CMOS				TTL		191-42
				Graphic Equalizer			715-9
				Graphics Circuits			362-71
Exclusive OR	CMOS			Ground Fault Interrupter			725-88
				H			
				Hall Effect Devices			
Exclusive OR/NOR	ECL 10K			Digital			195-31
					Interface		606-129
				Hamming Code ECC			585-1
ECL 100K				Hard Disk Circuits			362-75
				Heart Rate Monitor			143-5
				I			
High Current	See Driver Listings			IBM 360 Interface			
				Line Receivers			592-1
NAND	CMOS			IBM 370 Interface			
				Line Drivers			587-1
				Line Receivers			592-1
				IBM 3740			
				Microprocessor			359-40
OR	CMOS			IEEE-488			
				Microprocessor			359-40
				IF		See Radio Circuits listings	
				Ignition Automotive			717-2
				Image Sensors			824-52
OR-AND	ECL 10K			Indicator Low Battery			825-16
				Infrared Circuits			720-36
				Injector Drive			
OR-AND Invert	ECL 100K			Automotive			717-2
				Integrating ADC			541-1
				Interface			
Generator	Baud Rate	Digital	194-6	Analog Switches			502-7
				Analog to Digital Converters			
	Bit Rate			Binary			510-2
				Decimal			541-1
	Color Bar			Digital to Analog Converters			542-1
				Display			359-40
							580-1
Function	Accompaniment			Error Checking Circuits			585-1
				(Continued)			
				(Continued)			
Music	Noise			(Continued)			
				(Continued)			
				(Continued)			
Octave				(Continued)			
				(Continued)			
Polynomial				(Continued)			
				(Continued)			

IC MASTER

Function	Page-Line	Function	Page-Line
I	(Cont'd)	Line Drivers	
Interface	(Cont'd)	Differential	589-34
Keyboard	359-40	Single Ended	587-1
Keyboard Encoders-Decoders	586-1	Line Receivers	
Line Drivers	587-1	Differential	593-23
Line Receivers	592-7	Single Ended	592-1
Memory Drivers	602-1	Line Transceivers	
Multiprocessor	367-20	Differential	600-34
Peripheral Drivers	605-1	Single Ended	596-1
Sense Amplifiers	612-1	Linear Amplifiers	
Transmitters-Receivers		Special Purpose	702-3
Serial	613-1	Arrays Transistor	705-1
Interpolation		Comparators	708-1
Pulse Generator	359-40	Followers	727-19
Inverters See Digital-Inverters, Various Sections		Operational Amplifiers	
K		See Operational Amplifiers	
Keyboard		Other Linear Devices	821-1
Decoders	586-1	Phase Locked Loops/Synthesizers	780-2
Encoders	586-1	Prescalers	780-2
Interface	194-1	Telecommunication Circuits	809-2
Keyboard Controller		Liquid Crystal	
See Controllers		Display Driver	580-1
L		Logic See Digital listings	
Lamp Monitor		Logic Unit	
Automotive	717-2	Digital CMOS	102-13
LAN		ECL 10K	150-1
Circuits	363-10	ECL 100K	153-66
Ethernet	361-91	Look Ahead Carry	
Token Passing	359-40	See Digital-Arithmetic, Various Sections	
LANCE	359-40	Low Battery Indicator	825-16
Latch/Decoder/Driver		LRCC	585-1
Digital CMOS	122-11	M	
Display	580-1	Manchester Adapter	
Latches		Digital CMOS	143-5
ECL 10K	151-100	Manchester Decoder	
ECL 100K	154-115	Digital CMOS	143-5
Microprocessor		Interface	
1800	345-21	Transmitters-Receivers	614-7
See Digital-Latches, Various Sections		Microprocessors	363-29
TTL	183-136	Manchester Encoder	
LCD Drivers		Digital CMOS	143-5
See Display Driver listings		Interface	
LED Drivers		Transmitters-Receivers	614-7
See Display Driver listings		Microprocessors	363-29
Level Shifters		Manufacturers	
See Translators		See Manufacturers and Distributors Directory	
Line Circuits		MATV	721-77
Digital Bus Circuits	143-5		
General	587-1		

Function	Page-Line	Function	Page-Line
M	(Cont'd)	Microprocessors, RISC	323-3
Melody Circuit		MIL-STD-188	
Clock	717-97	Interface	
Memory		Line Drivers	589-34
Active Element			587-1
Digital	185-62	Line Receivers	593-23
CAM	ECL 100K 155-10		592-1
Controllers	602-47		
Drivers	602-1	Military	See Military pages
Dualport	135-117	Miscellaneous	
Esup2PROMs	977-15	Digital	
EPROMs	937-19	CMOS	143-5
FIFOs	905-55	ECL III	157-29
CMOS	135-117	ECL 100K	156-20
TTL	185-62	HNIL/HTL	159-95
Flash	964-45	Special	194-1
Management	602-2	TTL	191-42
Multiport Register	135-117	Microprocessor	
	185-62	General Purpose	367-20
PROMs	ECL 100K 155-10	Mixer	
UV Erasable	937-19	Balanced	780-2
RAMs	CMOS 135-117	Radios	718-54
Dynamic	989-36	9900	355-23
ECL 100K	155-10	PLL Circuits	780-2
Static	1032-40	Telecom	814-18
TTL	185-62	Modulator	
ROMs	General 910-19	Pulse-Width	826-106
Speech	720-114		799-8
Shift Registers		TV	721-77
TTL	185-62	TV Games	724-106
	189-23	Monitor	
Simultaneous Read/Write		Automotive Lamp	717-2
Digital	185-62	Heart Rate	143-5
TV	721-77	MOS Memory Drivers	602-2
Memory Drivers	602-1	Motor Circuits	
Meter		Interface	
Level	824-124	Peripheral Drivers	607-40
Peak Power	726-6	Motor Driver	
Microcomputer Development Systems		General	607-40
See Microprocessor-Development Systems		Motor Speed Control	
Section		General	605-1
Microcomputers	305-13	Recorders	721-37
See Microprocessor listings		MPCC	
Microcontroller		Microprocessor	
Microprocessor	327-30	System Components	359-40
Microprocessor		Multiplexer/Comparator	
CPUs	305-13	Digital	194-1
DSP	259-78	Special	
General Purpose Circuits	367-20	Multiplexer/Demultiplexer	
Peripheral Controllers	359-40	Digital	194-1
		Special	
		Multiplexers	
		Analog	506-70
		Analog Switches	
		See Digital-Multiplexers, Various Sections	
		Multipliers	
		See Digital-Multipliers, Various Sections	
		Multiprocessor Interface	367-20

IC MASTER

Function	Page-Line	Function	Page-Line
M	(Cont'd)	Parity Tree	
Multivibrators		CMOS	143-5
ECL III Miscellaneous	157-28	TTL	191-42
ECL 10K	152-62	PCM Filter	815-91
HNIL/HTL	159-81	Peripheral Drivers	605-1
TTL	188-135	Phase Comparators	780-32
Music		Phase Control	
Chimes	726-1	AC	821-8
General	717-112	Phase Locked Loop Circuits	
N		Digital CMOS	143-5
Network LAN See LAN		TTL	191-42
Nines Complementor		Linear	780-2
Digital CMOS	102-13	Photodetector	
NTDS	587-1	See Sensor, Image	
	593-23	PIA General	364-31
NTSC TV	722-113	Pin Cushion Correction	721-77
O		PIN Diode Driver	
Octave Generator		Digital Special	194-1
Music	717-112	Interface	605-1
Operational Amplifiers		Plasma Display Driver	580-1
Buffers	727-19	PLL See Phase Locked Loop listings	
Characteristics		Potentiometer	826-108
Duals	761-21	Power Supply	
Quads	772-42	See Voltage Regulator listings	
Singles	733-1	Power Supply Controller	803-122
Triples	772-24	Preamplifiers	
Chopper Stabilized	733-3	Cassette Recorder	721-37
Digital Gain Set	194-1	Remote Control	720-38
High Output Current	729-1	See also Amplifiers	
High Speed	729-94	Prefixes See Part Number Guide	
High Voltage	730-10	Prescalers	
Instrumentation	733-3	AM/FM	780-2
Low Bias Current	730-67	Count Extender	780-2
Low Drift	731-1	Digital	194-1
Low Power	731-75	General	780-2
Wide Band	731-95	TV	780-2
Opto Electronics	825-105	Pressure Transducers	826-130
Organ Circuits	720-38	Priority Encoder	
Oscillators		See Digital-Miscellaneous	
Clock Driver		Priority Interrupt Controller	367-20
TTL	191-42	Processor	
CMOS	139-168	Analog Real Time	259-78
Crystal	826-57	Arithmetic	
Quadrature	826-62	Digital	194-1
P		DSP	259-78
PAL TV	722-126		355-73
Parity Generator			358-71
See Digital-Arithmetic, Various Sections			353-159
		Bilingual TV	721-77
			(Continued)

Function	Page-Line	Function	Page-Line
P	(Cont'd)	Resolver Systems	827-21
Processor	(Cont'd)	Rhythm Circuit	
Burst Error		Music	717-112
General	367-20	ROMs	See Memory listings
Microprocessor	355-73	RS232	Line Drivers 587-1
Color TV	724-106	Line Receivers	593-23
DSP	259-78		592-1
Floating Point	370-68	RS422	Line Drivers 589-34
TV	722-111		587-1
Programmable Diodes	194-1	Line Receivers	593-23
Programmable Logic		RS423	Line Drivers 589-34
General	1302-1		587-1
PROMs	See Memory Listings	Line Receivers	593-23
Pulse Synchronizer	191-42	RS485	Line Transceivers 600-34
Pulse-Width Modulator	799-10	Sales Offices	
Q		See Manufacturers and Distributors Directory	
R		Sample and Hold Circuits	827-56
Radio Circuits		Schmitt Trigger	
AM	718-54	See Digital-Inverters, Various Sections	
AM/FM	718-90	SCIC	359-40
FM	719-50	SCR	Arrays 705-1
Radio Control	720-38	Control	828-12
SSB	718-54	SCSI	359-40
TV	721-77	SDLC	Microprocessor
Rate Multiplier		General	359-40
Digital	CMOS 143-5	9900	355-23
TTL	191-42	Sense Amplifiers	612-1
Receivers		Sequencer	
CB Radio	717-47	TTL	191-42
IR	720-36	Servo	Circuits 828-28
Line	See Also Line Circuits 593-23	Servomechanism	359-40
Remote Control	592-1	Shift Registers	
Consumer	720-38	See Digital-Shift Registers, Various Sections	
Recorder		Shifter	Digital TTL 191-42
Video Tape	721-76	Microprocessor	
Reference Voltage	804-87	EPIC	342-127
Registers		Signal Processor	
See Memory listings		DSP	259-78
See Shift Register listings		SMD Controller	359-40
Regulators		Smoke Detector	726-33
Motor Speed	605-1		721-77
Switching	799-2	Sound Generator	
Remote Control Circuits		Consumer	
Consumer	720-36	Games	724-106
Digital	CMOS 143-5	Microprocessor	359-40
		Speech Circuits	
		Consumer	720-114
			(Continued)

IC MASTER

Function	Page-Line	Function	Page-Line
R	(Cont'd)	Synthesizers	(Cont'd)
Speech Circuits	(Cont'd)	General	781-43
Telephone	816-129	Mobile Radio	780-2
Speed Control		Music	717-112
Automotive	717-2	Speech	721-6
Speedometer		TV	721-77
Automotive	717-2		
SRAM See Memory listings		T	
SSB Detector		Tachometer Circuit	726-50
Radio	718-54	Tape Deck Circuits	721-37
Standard Cells	1260-8	Tape Recorder Circuits	
State Machine	367-20	Audio	721-37
Stereo AM	718-82	Video	721-76
FM	719-66	Telecommunication Circuits	809-2
TV	723-58	Telephone Circuits	809-2
String Proximity Computer	359-40	Teletext Circuits	721-77
Strobe Light		Television Circuits	721-77
Camera	717-42	Temperature	
Successive Approximation Register		Transducers	828-113
TTL	191-42	Terminator	
Successive Approximation Register		Digital CMOS	143-5
CMOS	143-5	Test Pattern Generator	
Suffixes See Part Number Guide		TV	721-77
Switches Analog Drivers	502-7	Text Processor	
with Drivers	502-7	Microprocessor	
without Drivers	506-68	General	359-40
Cassette	721-37	Thermal Print Head Driver	605-1
Crosspoint	506-70	Timers Counter/Timer	194-1
Telecom	810-73	Delayed	820-17
Darlington	605-1	Digital Delay	143-5
	705-1	Tone Decoders	
Data Path	102-13	PLL Circuits	780-2
Hall Effect		Telecom	818-14
Digital	194-1	Tone Detector	
Multiplexers	506-70	Call Progress	809-33
Touch Digital	143-5	Tone Generator	
Linear	726-45	Microprocessor	
TV	721-77	1800	345-21
Switching Regulator Circuits	799-2	Music	717-112
Synchro Systems	828-99	Telecom	818-47
Synchronizer		Top Octave Generator	717-112
Pulse	191-42	Touch Switches	
Synchronous Serial Data		See Switch listings	
Adapter	367-20	Traffic Camera	
Synthesizers		TV	721-77
AM	718-54	Traffic Information	
AM/FM	780-2	Automotive	717-2
CB Radio	717-47	Transceivers	
Divider	780-2	Addressable	143-5
(Continued)		Backplane	191-42
		(Continued)	

Function	Page-Line	Function	Page-Line
T	(Cont'd)	V	
Transceivers	(Cont'd)	V.24	587-1
Bus TTL	164-67	V.26	587-1
ECC	596-1	V.28	587-1
Line	600-34	Vacuum Fluorescent Driver	
	596-1	See Display Driver listings	
Microprocessor		VCO Consumer	717-112
NSC800	352-35	ECL III	157-29
8000	355-73	Generators	
Ultrasonic	720-38	Function	780-2
Transducers		Waveform	780-2
Pressure	826-130	PLL Circuits	780-2
Temperature	828-113	TTL	191-42
Transistor		Video Circuits	
Arrays	705-1	CRT	360-15
Matched	705-1	TV	724-10
Translators		Video Disk	
CMOS	142-147	TV	721-77
ECL 10K	152-83	Video Game Circuits	724-106
HNIL/HTL	159-88	Videotext Circuits	359-40
TTL	191-20	Vocabulary	720-114
Various	605-1	Negative	791-95
Transmitters			791-95
IR	720-84	Positive	790-53
Remote Control	720-71	Automotive	717-2
TRIAC Control	828-12	Fixed Dual	790-28
	718-54		790-28
AM/FM	719-41	Negative	787-123
TV	723-75		787-123
	721-77	Positive	783-1
TV Circuits	721-77	Switching Regulator Circuits	799-2
U		W	
UART Microprocessor		Watch Consumer	717-72
NSC1800	345-21	Digital CMOS	139-168
NSC800	352-35	Waveform Generators	781-104
8000	355-73	Winchester Circuits	366-8
9900	355-23	X	
Transmitters-Receivers	615-10	Z	
Ultrasonic Circuits	720-83		
UPC/EAN Scanner	367-20		
UPI Circuits			
Microprocessor			
General	359-40		
μ 255 Law			
Linear	809-95		

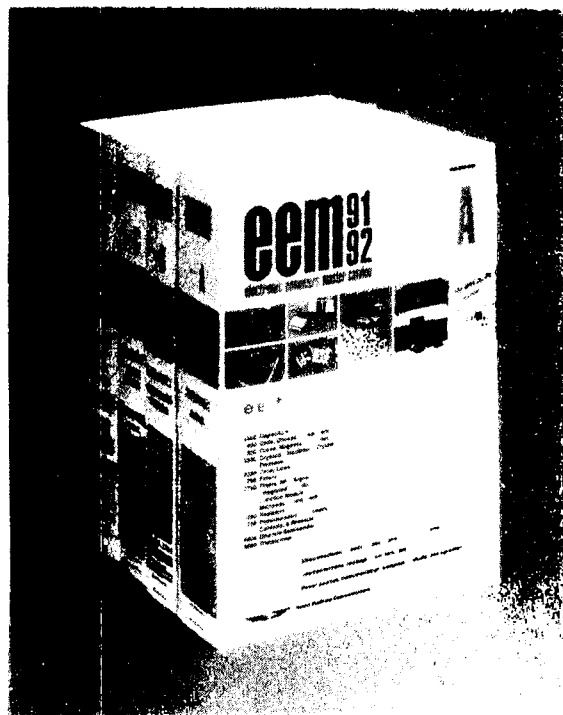
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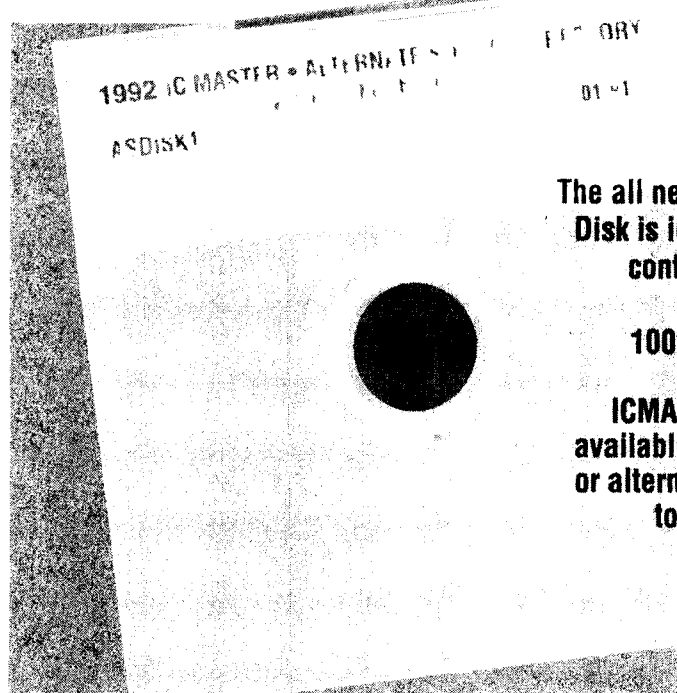
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INTRODUCTION TO DIGITAL

Digital devices are listed by major product families: BiCMOS, CMOS, ECL, GaAs, or TTL, and within them by functional groups such as arithmetic, buffers and inverters.

A few digital devices, such as watch, clock, speech and music circuits, are not covered in the digital section, but are included in the Linear – Consumer guide.

Digital Logic Topics

- CMOS
- BiCMOS
- ECL
- GaAs
- HNIL/HTL
- TTL

DIGITAL—CMOS

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions				Address Generator, 16 Bit with Look-Ahead Pipeline				Fixed-Point Multiplier (12x12)			
Adder, NBCD (natural binary coded decimal)				ADSP1410J	* AD			ADSP1012A	◊ AD		
4XXX	MC14560BC	Motorola		ADSP1410K	* AD			Fixed-Point Multiplier (16x16)			
	TC4560B	Toshiba (3727)		ADSP1410S	*† AD			ADSP1016A	◊ AD		
Adder, Triple Serial, Negative Logic, with Internal Carry				ADSP1410T	*† AD			Fixed-Point Multiplier (24x24)			
4XXX	MC14038BC	Motorola						ADSP1024A	AD		110
	HCC4038B	† SGS-Thomson		Advanced, Image Manipulation Engine				Floating Point Accelerator, MIL-STD-1750A, 8 MFLOPs			
	HCF4038B	◊ SGS-Thomson		TMC2302	TRWLSI		65	C	TMC3202	TRWLSI	
	TC4038B	Toshiba (3727)	5	ALU Function Generator				Floating Point Arithmetic Unit			
Adder, Triple Serial, Positive Logic, with Internal Carry				AC	74AC11181	Ti		TDC1032-1	† TRWLSI		
4XXX	MC14032BC	Motorola		ALU, 16-Bit	CY7C9116-35C	Cypress		Floating Point Chipset (multiplier and ALU)			
	HCF4032B	◊ SGS-Thomson		CY7C9117-35	*† Cypress			ADSP3211	* AD		
	TC4032B	Toshiba (3727)		Arithmetic Logic Unit (for Digital Signal Processing applications)				ADSP3221	* AD		
Adder, 4-Bit, Full				ACT	54ACT705	† National		ADSP3222	* AD		115
AC	CD54AC283	*† Harris		74ACT705	National			Floating Point Divider, 32-Bit			
ACT	CD74ACT283	* Harris		Arithmetic Logic Unit/Function Generator				TMC3210	TRWLSI		
C	MM74C83	National		ACT	74ACT11181	Ti		Floating Point Multiplier and ALU, 32-Bit			
HC	CD54HC583	† Harris		Arithmetic Logic Unit, 4-Bit				TMC3032	TRWLSI		
	CD74HC583	Harris		4XXX	CD40181BE	† Harris		TMC3032-1	TRWLSI		
	74HC583	Signetics		Barrel-Shifter, 32-bit				TMC3033	TRWLSI		
HCT	CD54HCT583	† Harris		LSH32-1C	◊* LogicDev			TMC3033-1	TRWLSI		120
	CD74HCT583	Harris		LSH32-1M	◊*† LogicDev			Floating Point Processor, 32-Bit			
	74HCT583	Signetics		Bit Multiplier, 2's Complement (12x12)				AM29C325	AMD		
4XXX	CD4008B	‡ Harris		MPY012-1	IMI			Floating Point Processor, 64-Bit			
	CD4008BE	Harris		MPY012-5	IMI		75	ACT	SN74ACT8847	* Ti	
	CD4008A	‡ Micrel		Comparator				Floating Point Unit (supports single/double precision floating point operations)			
	CD4008B	‡ Micrel		HC	HCC4585B	SGS-Thomson		CY7C602A	Cypress		
	MC14008BC	Motorola		Comparator, 8-Bit				Identity Comparator, 8-Bit			
	CD4008BC	National		PCT	P54PCT521	Performance		AC	MC74AC521	◊ Motorola	
	CD4008BM	† National		P54PCT521A	◊‡ Performance			54AC521	† National		
	HCC4008B	† SGS-Thomson	25	P54PCT521B	◊‡ Performance			74AC521	National		125
	HCF4008B	SGS-Thomson		P74PCT521	◊ Performance			74AC11520	Signetics		
	HEF4008B	Signetics		P74PCT521A	◊ Performance			74AC11521	Signetics		
	TC4008B	Toshiba (3727)		P74PCT521B	◊ Performance			SN54AC11520	*† Ti		
Adder, 4-Bit, Full with Fast Carry				Comparator, 8-Bit Equality				SN54AC11521	*† Ti		130
AC	CD74AC283	* Harris		HCT	TC74HCT688A	Toshiba		ACT	MC74ACT521	◊ Motorola	
ACT	CD54ACT283	*† Harris		Comparator, 8-Bit Identity				74ACT11520	Signetics		
Cell	SN74283	Ti		FCT	Q574FCT20521	◊ Quality Semi		74ACT11521	Signetics		
HC	CD54HC283	*† Harris		Q574FCT521	◊ Quality Semi (3613)		85	SN54ACT11520	*† Ti		
	CD74HC283	* Harris		Correlator				SN54ACT11521	*† Ti		135
	HD74HC83	Hitachi		TMC2023-1	† TRWLSI			AHCT	KS74AHCT682	Samsung	
	MM54HC283	† National		TMC2221-1	† TRWLSI			KS74AHCT684	Samsung		
	MM74HC283	National		Correlator, 1x128, 20 MHz				KS74AHCT686	Samsung		
	M74HC283	SGS-Thomson		C	TMC2221	TRWLSI		KS74AHCT688	† Samsung		
	74HC283	* Signetics		Correlator, 64x1, 30 MHz				FCT	IDT54FCT521A		
	SN74HC283	Ti		C	TMC2023	TRWLSI			IDT74FCT521A	◊*† IDT	
	TC74HC283A	Toshiba		Data Path Switch				HC	MC54HC688	† Motorola	
HCT	CD54HCT283	*† Harris		4XXX	GD4704B	GoldStar		MC74HC688	Motorola		
	CD74HCT283	* Harris		Diagnostic Scan Register				MM54HC688	† National		
	74HCT283	* Signetics		PCT	P29PCT818AC	Performance		MM74HC688	National		
Adder, 4-Bit, Full with Fast Carry and Center Power Pins				P29PCT818AM	† Performance			M74HC688	SGS-Thomson		
C	MM54C83	† National		Digital Mixer				LR74HC688	† Sharp		
Adder, 4-Bit, Full with Fast Carry				TMC2249-1	TRWLSI			SN54HC688	† Ti		
HC	M74HC283	Mitsubishi		Equality Comparator, 8-Bit				SN74HC682	Ti		
Adder-Subtractor	L4C381C	◊* LogicDev		HC	CD54HC688	† Harris		SN74HC684	Ti		
	L4C381M	◊*† LogicDev		CD74HC688	Harris			SN74HC688	Ti		150
Address Comparator, 12-Bit				HD74HC688	Hitachi			HCT	MM54HCT688	† National	
HCTLS	KS74HCTLS679	Samsung		74HC688	† Signetics			MM74HCT688	† National		
	KS74HCTLS680	Samsung		TC74HC688A	Toshiba			HC	KS74HCTLS518	Samsung	
Address Comparator, 12-Bit to 4-Bit				HCT	CD54HCT688	† Harris		KS74HCTLS519	Samsung		
AHCT	KS74AHCT679	Samsung		CD74HCT688	Harris			KS74HCTLS520	Samsung		
	KS74AHCT680	Samsung		M74HCT688	† SGS-Thomson			KS74HCTLS521	Samsung		
HC	SN74HC679	Ti		74HCT688	† Signetics			KS74HCTLS522	Samsung		
	SN74HC680	Ti		Fast Cosine Transformer				KS74HCTLS568	Samsung		
Address Comparator, 16-Bit				TMC2311	TRWLSI			KS74HCTLS689	Samsung		160
AC	74AC11677	Signetics		Fast Fourier Transform Controller and ALU, 16-Bit, 20 MHz				Identity Comparator, 8-Bit with Open Drain Outputs			
	74AC11678	Signetics		C	TMC2310	TRWLSI		AHCT	KS74AHCT689	Samsung	
ACT	74ACT11677	Signetics		Fixed-Point Multiplier (8x8)				Identity Comparator, 8-Bit with Pullup Resistors			
	74ACT11678	Signetics		ADSP1080A	AD			AC	54AC520	† National	
Address Comparator, 16-Bit to 4-Bit				ADSP1081A	* AD			74AC520	National		
HC	SN74HC677	Ti									(Continued)
	SN74HC678	Ti	60								

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions (Cont'd)				Multiplier-Accumulator (16x16) (Cont'd)				Pipeline Register, Multilevel (Cont'd)			
Multiplier (16x16) 2's Complement (Cont'd)	ADSP1016AS	◊† AD		TMC2210-3 W559510	TRWLSI Waferscale (3753)	65		PCT	29PCT520A	Performance	
	ADSP1016AT	◊† AD							29PCT520B	Performance	
									29PCT521	◊‡ Performance	125
Multiplier (16x16) 2's Complement and Unsigned Magnitude or Mixed Mode Operation.	CY7C516	Cypress		Multiplier-Accumulator (32x32)	L64032-10 L64032-12 L64032-80	† LSI Logic (3570) † LSI Logic (3570) † LSI Logic (3570)		FCT	29PCT521A	◊‡ Performance	
	CY7C516C	◊ Cypress							29PCT521B	◊‡ Performance	
	CY7C516M	◊† Cypress		Multiplier-Summer (12x12)	LMS12C LMS12M	◊ LogicDev ◊† LogicDev		Pipeline Register, 4x8-Bit (with load control parameters)	QS29FCT20520 ◊ Quality Semi (3614)		
	CY7C517	◊ Cypress		Parity Generator/Checker with Clear, 9-Bit	HCTLS	KS74HCTLS280 Samsung		Priority Encoder, 10-Line Decimal to 4-Line BCD	QS29FCT20521 ◊ Quality Semi (3614)		
	CY7C517C	◊* Cypress						HC	QS29FCT20520 ◊ Quality Semi (3613)		
	CY7C517M	◊† Cypress		Parity Generator/Checker, 8-Bit Even, Dual	PCT	P54PCT481 P54PCT481A P74PCT481 P74PCT481A		LR74HC147	QS29FCT2521 ◊ Quality Semi (3613)		
	IDT7216L	◊† IDT						SN74HC147	◊† IDT		
	IDT7216LB	◊† IDT		Parity Generator/Checker, 8-Bit Odd, Dual	PCT	P54PCT480 P54PCT480A P74PCT480 P74PCT480A		TI	◊† IDT		
	IDT7217L	◊ IDT						Processor, Simulator/Assembler for Geometric Arithmetic Parallel Processor	NCR45GS4 NCR		
	IDT7217LB	◊† IDT		Parity Generator/Checker, 9-Bit	AC	54AC280 74AC280		Program Sequencer, 16 Bit with Look-Ahead Pipeline	ADSP1401J * AD		
	LMU16C	◊ LogicDev						ADSP1401K	* AD		
	LMU16M	◊† LogicDev		ACT	54ACT280 74ACT280	† National National		ADSP1401S	* AD		
	LMU17C	◊† LogicDev		FCT	Q574FCT1280 Q574FCT280	◊ Quality Semi (3613) ◊ Quality Semi (3613)		ADSP1401T	* AD		
	LMU17M	◊† LogicDev		Parity Generator/Checker, 9-Bit Odd/Even	AC	CD54AC280 CD74AC280 74AC11280		ADSP3220J	* AD		
	LMU216C	◊ LogicDev						ADSP3220K	* AD		
	LMU216M	◊† LogicDev		ACT	CD54ACT280 CD74ACT280	*† Harris * Harris		ADSP3220S	*† AD		
	LMU217C	◊ LogicDev		HCT	CD54HCT280 CD74HCT280 M74HCT280	*† Harris * Harris Hitachi		ADSP3220T	*† AD		
	LMU217M	◊† LogicDev		HCT	MC54HCT280 MC74HCT280 MM54HCT280 MM74HCT280 M74HCT280 74HCT280	† Motorola Motorola † National National SGS-Thomson * Signetics		Register File, Dual 16x4	ACT 74ACT11870 TI		
	TMC216H	TRWLSI		Parity Generator/Checker, 9-Bit	4XXX	HCC40101B		Register Files, 4x4, Three-State	HCTLS KS74HCTLS670 Samsung		
Multiplier (16x16) 2's Complement, Unsigned or Mixed Operands	LMU18C	◊ LogicDev		Parity Generator/Checker, 9-Bit Odd/Even	AC	74AC11286 74ACT11280 74ACT11286		Shift Register	TMC2111 † TRWLSI		
	LMU18M	◊† LogicDev		Parity Generator-Checker, 9-Bit	4XXX	HCF40101B		Binary Full Adder with Fast Carry (4-bit)	AC 54AC283 † National		
Multiplier (24x24)	ADSP1024AJ	AD		Pipeline Register, Fast Multi-Level	PCT	P29PCT520AC P29PCT520AM P29PCT521AC P29PCT521AM		ACT	54ACT283 † National		
	ADSP1024AK	AD		Pipeline Register, Multilevel	FCT	IDT29FCT520A IDT29FCT520AT IDT29FCT520CT IDT29FCT521A IDT29FCT521AT IDT29FCT521BT IDT29FCT521CT		Dual High-Speed Adder	AHCT KS74AHCT183 Samsung		
	ADSP1024AS	AD		Dual-Port 16x4 Register File	AC	74AC11870		HCTLS	KS74HCTLS183 Samsung		
	ADSP1024AT	AD		Dual-Port 16x5 Register File	AC	74AC11858		Dual-Port 32x4 Register File	AC 74ACT11858 TI		
Multiplier 32-Bit Parallel	AM29C323	* AMD		Three-Port Register File	TMC3220	† TRWLSI		Nines Complementer	4XXX MC14561BC Motorola		
Multiplier-Accumulator (8x8)	ADSP1008A	* AD		4-Bit ALU	AC	74AC11181		4-Bit Arithmetic Logic Unit	ACT 54ACT181 † National		
	ADSP1008AJ	* AD		4-Bit Magnitude Comparator	HC	M74HC85		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1008AK	* AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1008AS	† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1008AT	*† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
C	TMC2208	TRWLSI		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
Multiplier-Accumulator (12x12)	ADSP1009A	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1009AJ	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1009AK	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1009AS	◊† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1009AT	◊† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	IDT7209L	◊ IDT		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	IDT7209LB	◊† IDT		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA1009C	◊ LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA1009M	◊† LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
Multiplier-Accumulator (16x16)	ADSP1010A	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1010AJ	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1010AK	◊ AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1010AS	◊† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1010AT	◊† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1101	AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1110AJ	AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1110AK	AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1110AS	† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	ADSP1110AT	† AD		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	CY7C510M	◊† Cypress		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	IDT7210L	◊* IDT		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	IDT7210LB	◊† IDT		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	IDT7213LB	◊† IDT		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA1010C	◊ LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA1010M	◊† LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA2010C	◊ LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	LMA2010M	◊† LogicDev		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	1010	Micro-C		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	TMC2210-1	TRWLSI		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		
	TMC2210-2	TRWLSI		4-Bit Binary Adder	AC	TC74AC283		4-Bit Binary Adder	AC TC74AC283 ◊ Toshiba		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions (Cont'd)								Hex (Cont'd)			
4-Bit Binary Full Adder				32-Bit Error Detection and Correction Unit, Three-State PCT				Hex			
ACT	TC74ACT283	◊ Toshiba		P54PCT632B	◊ Performance			HC	HCF4009UB	SGS-Thomson	
				P74PCT632	◊ Performance				HCF4010B	SGS-Thomson	
8 to 3-Line Priority Encoder				P74PCT632A	† Performance				HCF4503B	SGS-Thomson	
AHCT	54AHCT148	◊ Ideal Semi (3532)		P74PCT632B	◊ Performance				M74HC7007	◊ SGS-Thomson	
	74AHCT148	◊ Ideal Semi (3532)							SN74HC4061	TI	
	KS74AHCT148	Samsung		Buffers				HCT	M74HCT7007	SGS-Thomson	
HC	HD74HC148	Hitachi	5	Buffer, Three-State					TC74HCT7007A	Toshiba	
	SN74HC148	TI		AC	TC74AC367	Toshiba		Hex Buffer/Counter, Inverting			
					TC74AC368	Toshiba		4XXX	CD4049AE	† Harris	
8-Bit Identity Comparator				Quad Bus Buffer				Hex High Voltage			
AC	TC74AC520	◊ Toshiba		AC	TC74AC125	◊ Toshiba		5XXX	TC5064B	Toshiba	
	TC74AC521	◊ Toshiba			TC74AC126	◊ Toshiba			TC5065B	Toshiba (3727)	
ACT	TC74ACT520	◊ Toshiba		Quad Gated, Three-State				Hex (Inverting)			
	TC74ACT521	◊ Toshiba	10	AHCT	KS74AHCT125	Samsung		HC	M74HC4049B	Mitsubishi	
8-Bit Magnitude Comparator					KS74AHCT126	Samsung		HCT	CD54HCT4049	† Harris	
AC	74AC11860	TI		HC	CD54HC125	*† Harris			CD74HCT4049	Harris	
	74AC11865	TI			CD54HC126	*† Harris		4XXX	CD4009UB	† Harris	
	74AC11885	TI			CD74HC125	Harris			CD4009UBE	Harris	
ACT	74ACT11860	TI			CD74HC126	* Harris			CD4009A	‡ Micrel	
8-Bit Multiplexed I/O Read-Back Register					HD74HC125	Hitachi			CD4009AC	National	
AC	74AC11979	TI	15		HD74HC126	Hitachi			CD4009AM	† National	
8x9 I/O Read-Back Register					MC54HC125A	† Motorola			TC4009UB	Toshiba (3727)	
AC	74AC11987	TI			MC54HC126A	† Motorola		Hex (Inverting) Three-State, Strobed			
8x9 I/O Read-Back Register w/Address Latch					MC74HC125A	Motorola		4XXX	CD4502B	‡ Harris	
AC	74AC11988	TI			MC74HC126A	Motorola			CD4502BE	Harris	
9-Bit Odd/Even Parity Generator/Checker					MM54HC125	† National			MC14502BC	Motorola	
AC	74AC11280	Signetics			MM54HC126	† National			HCC4502B	† SGS-Thomson	
ACT	74ACT11280	Signetics			MM74HC125	National			HCF4502B	◊ SGS-Thomson	
9-Bit Odd/Even Parity Generator/Checker with Bus Drive I/O Port				Quad Gated, Three-State					HEF4502B	Signetics	
AC	74AC11286	Signetics		HC	MM74HC126	National			TC4502B	Toshiba (3727)	
ACT	74ACT11286	Signetics	20	Quad Gated, Three-State				Hex (Inverting)-Improved			
9-Bit Parity Checker				HC	M74HC125	SGS-Thomson		HC	CD54HC4049	† Harris	
AC	TC74AC280	◊ Toshiba			M74HC126	SGS-Thomson			CD74HC4049	Harris	
9-Bit Parity Checker/Generator					74HC125	* Signetics			MC54HC4049	† Motorola	
ACT	TC74ACT280	◊ Toshiba			74HC126	* Signetics			MC74HC4049	Motorola	
9-Bit Parity Generator					SN54HC125	TI			MM54HC4049	† National	
ACT	SN54ACT11280	◊† TI			SN54HC126	◊† TI			MM74HC4049	National	
10-Bit Serial-In, Parallel-Out Shift Register					SN74HC125	TI			M74HC4049	SGS-Thomson	
AC	74AC11898	TI	25		SN74HC126	TI			74HC4049	Signetics	
16-Bit Address Comparators					TC74HC125A	Toshiba			TC74HC4049A	Toshiba	
AC	74AC11677	TI			TC74HC126A	Toshiba		85	4XXX	GD4049B	‡ GoldStar
	74AC11678	TI							CD4049UB	‡ Harris	
ACT	74ACT11677	TI			HCT	CD54HCT125	*† Harris		CD4049UBE	Harris	
	74ACT11678	TI				CD54HCT126	† Harris		CD		

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Buffers (Cont'd)				Hex Three-State HCT (Cont'd)				Hex Three-State, Inverting HCT (Cont'd)			
Hex Non-Inverting-Improved 4XXX (Cont'd)				CD74HCT367 Harris				74HCT366 Signetics			
				54HCTLS365A $\circ \nabla$ Ideal Semi (3534)				74HCT368 Signetics			
CD4050B ∇ Micrel				54HCTLS367A $\circ \nabla$ Ideal Semi (3534)				Hex Three-State, Non-Inverting 4XXX TC4503B Toshiba			
MC14050BC Motorola				74HCTLS365A $\circ \nabla$ Ideal Semi				Octal Buffer/Line Driver C MM54C941 ∇ Micrel			
CD4050BC National				74HCTLS367A $\circ \nabla$ Ideal Semi (3534)				MM54C941 ∇ National			
CD4050BM National				KS74HCTLS365 Samsung				Octal Buffer/Line Driver, Inverting, Three-State ACT TC74ACT240 Toshiba			
HCC4050B ∇ SGS-Thomson				KS74HCTLS367 Samsung				HC M74HC540 Mitsubishi			
HCF4050B $\circ \nabla$ SGS-Thomson				74HCT365 Signetics				Octal Buffer/Line Driver, Non-Inverting, Three-State ACT TC74ACT244 Toshiba			
HEF4050B Signetics				74HCT367 Signetics				FCT IDT54FCT540 ∇ IDT			
TC4050B Toshiba (3727)				5XXX TC5012B Toshiba (3727)				IDT54FCT540A ∇ IDT			
Hex Open Drain Active Pull Down C MM54C906 ∇ Micrel				Hex Three-State, Inverting AHCT AHCT368 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT540AT ∇ IDT			
MM54C906 ∇ National				54AHCT366 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT540CT ∇ IDT			
Hex Open Drain Active Pull Up C MM54C907 ∇ Micrel				54AHCT367 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT540T ∇ IDT			
MM54C907 ∇ National				54AHCT368 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT541 ∇ IDT			
MM74C907 National				74AHCT366 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT541A ∇ IDT			
Hex PMOS Inverting (PMOS to CMOS or TTL) C MM54C903 ∇ Micrel				74AHCT367 $\circ \nabla$ Ideal Semi (3532)				IDT54FCT541CT ∇ IDT			
MM54C903 ∇ National				KS74AHCT366 Samsung				IDT54FCT541T ∇ IDT			
MM74C903 National				KS74AHCT368 Samsung				IDT74FCT540 ∇ IDT			
Hex PMOS Non-Inverting (PMOS to CMOS or TTL) C MM54C904 ∇ Micrel				HC GD74HC366 GoldStar				IDT74FCT540A ∇ IDT			
MM54C904 ∇ National				GD74HC368 GoldStar				IDT74FCT540AT ∇ IDT			
MM74C904 National				CD54HC366 ∇ Harris				IDT74FCT540CT ∇ IDT			
Hex TTL Inverting (CMOS to TTL) C MM54C901 ∇ Micrel				CD54HC368 ∇ Harris				IDT74FCT540T ∇ IDT			
MM54C901 ∇ National				CD74HC366 Harris				IDT74FCT541 ∇ IDT			
MM74C901 National				CD74HC368 Harris				IDT74FCT541A ∇ IDT			
Hex TTL Non-Inverting (CMOS to TTL) C MM54C902 ∇ Micrel				HD74HC366 Hitachi				IDT74FCT541AT ∇ IDT			
MM54C902 ∇ National				HD74HC368 Hitachi				IDT74FCT541CT ∇ IDT			
MM74C902 National				MC54HC366 ∇ Motorola				IDT74FCT541T ∇ IDT			
Hex Three-State MM70C95 ∇ National				MC54HC368 ∇ Motorola				Octal Buffer/Line Driver/Receiver, Inverting, Three-State HC M74HC240-1 Mitsubishi			
MM70C97 ∇ National				MC74HC366 Motorola				HCT M74HCT240-1 Mitsubishi			
MM80C95 National				MC74HC368 Motorola				Octal Buffer/Line Driver/Receiver, Non-Inverting, Three-State HC M74HC244-1 Mitsubishi			
MM80C97 National				MM54HC366 ∇ National				HCT M74HCT241-1 Mitsubishi			
54ACT367 $\circ \nabla$ National				MM54HC368 ∇ National				M74HCT244-1 Mitsubishi			
74ACT367 $\circ \nabla$ National				MM74HC366 National				Octal Buffer/Line Driver with Parity, Inverting, Three-State AC 74AC11655 TI			
AHCT 54AHCT365 $\circ \nabla$ Ideal Semi				M74HC366 SGS-Thomson				ACT 74ACT11655 TI			
KS74AHCT365 Samsung				M74HC368 SGS-Thomson				Octal Buffer/Line Driver with Parity, Non-Inverting, Three-State AC 74AC11656 TI			
HC GD74HC365 GoldStar				LR74HC366 Sharp				Octal Buffer/Line Driver, Three State ACT 54ACT540 ∇ National			
GD74HC367 GoldStar				M74HC366 Sharp				54ACT541 ∇ National			
CD54HC365 ∇ Harris				74HC366 Signetics				74ACT540 National			
CD54HC367 ∇ Harris				74HC368 Signetics				74ACT541 National			
CD74HC365 Harris				SN54HC366 ∇ TI				V54ACT465 ∇ VTC			
CD74HC367 Harris				SN54HC368 ∇ TI				V54ACT467 ∇ VTC			
HD74HC365 Hitachi				SN74HC366 TI				V74ACT465 VTC			
HD74HC367 Hitachi				SN74HC368 TI				V74ACT467 VTC			
M74HC367 Mitsubishi				TC74HC366A Toshiba				AHCT KS74AHCT465 Samsung			
MC54HC365 ∇ Motorola				TC74HC368A Toshiba				KS74AHCT467 Samsung			
MC54HC367 ∇ Motorola				HCT CD54HCT366 ∇ Harris				HC M74HC541 Mitsubishi			
MC74HC365 Motorola				CD54HCT368 ∇ Harris				MV74HCT541 GEC Plessey			
MC74HC367 Motorola				CD74HCT366 Harris				54HCT541SOS GEC Plessey			
MM54HC365 ∇ National				CD74HCT368 Harris				74HCT541 GEC Plessey			
MM54HC367 ∇ National				54HCTLS366A $\circ \nabla$ Ideal Semi (3534)				CD54HCT541 ∇ Harris			
MM74HC365 National				54HCTLS368A $\circ \nabla$ Ideal Semi (3534)				CD74HCT541 $\circ \nabla$ Harris			
MM74HC367 National				74HCTLS366A $\circ \nabla$ Ideal Semi (3534)				54HCTLS541 $\circ \nabla$ Ideal Semi (3534)			
HCC4503B SGS-Thomson				74HCTLS368A $\circ \nabla$ Ideal Semi (3534)				74HCTLS541 $\circ \nabla$ Ideal Semi (3534)			
M74HC365 SGS-Thomson				KS74HCTLS366 Samsung				MM54HCT541 ∇ National			
M74HC367 SGS-Thomson				KS74HCTLS368 Samsung				MM74HCT541 National			
LR74HC365 Sharp				HCT CD54HCT366 ∇ Harris				P54PCT240A ∇ Performance			
74HC365 Signetics				CD74HCT366 Harris				P54PCT241A ∇ Performance			
74HC367 Signetics				54HCTLS366A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
SN54HC365 ∇ TI				54HCTLS368A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
SN74HC365 TI				74HCTLS366A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
SN74HC367 TI				74HCTLS368A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
TC74HC365A Toshiba				74HCTLS366A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
TC74HC367A Toshiba				74HCTLS368A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
HCT CD54HCT365 ∇ Harris				74HCTLS366A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
CD54HCT367 ∇ Harris				74HCTLS368A $\circ \nabla$ Ideal Semi (3534)				(Continued)			
CD74HCT365 Harris				74HCTLS366A $\circ \nabla$ Ideal Semi (3534)				(Continued)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Buffers (Cont'd)											
Octal Buffer/Line Driver, Three State HCT				Octal Bus Buffer				10-Bit Buffer/Line Driver, Three-State			
				ACT	TC74ACT540	♦ Toshiba		ACT	54ACT827	† National	
					TC74ACT541	♦ Toshiba	65		74ACT827	National	
				Octal Bus Buffer, Three-State				10-Bit Buffer/Line Driver, Three-State, Inverting			
				ACT	TC74ACT241	♦ Toshiba		AC	74AC11828	TI	
				Octal Bus Driver, High Voltage, Inverting, Three-State				10-Bit Buffer/Line Driver, Three-State Non-Inverting			
				FCT	IDT54FCT240AT				AM29C827AC	AMD	115
						♦† IDT			V74FCT827A	♦ VTC	
					IDT54FCT240CT	♦† IDT			IDT54FCT827A		
						♦† IDT		FCT	IDT54FCT827AT	♦† IDT	
					IDT54FCT240T	♦† IDT			IDT54FCT827B	♦† IDT	
					IDT74FCT240AT	♦† IDT			IDT54FCT827BT	♦† IDT	
					IDT74FCT240CT	♦ IDT	70		IDT54FCT827CT	♦† IDT	120
						♦ IDT			IDT54FCT827CT	♦† IDT	
					IDT74FCT240T	♦ IDT			IDT74FCT827A	♦ IDT	
						♦ IDT			IDT74FCT827AT	♦ IDT	
				HC	74HCT240	♦ Signetics			IDT74FCT827BT	♦ IDT	
				Octal Bus Driver, High Voltage, Non-Inverting, Three-State, Complementary Controls					IDT74FCT827CT	♦ IDT	125
				HC	M74HC241HV	SGS-Thomson			V54FCT827A	† VTC	
				Octal Bus Driver, Inverting, Three-State					IDT74FCT827B	♦ IDT	
				AC	CD54AC240	♦ Harris	75			♦ IDT	
					CD74AC240	♦ Harris				† VTC	
				HC	54HC240	† Signetics					
					74HC240	Signetics					
				HCT	54HCT240	† Signetics					
				Octal Bus Driver, Non-Inverting, Three State, Complementary Controls							
				AC	CD54AC241	♦† Harris	80				
					CD54AC244	♦† Harris					
					CD74AC241	♦ Harris					
					CD74AC244	♦ Harris					
				Octal Bus Driver, Non-Inverting, Three-State, Complementary Controls							
				FCT	IDT54FCT241AT						
						♦† IDT					
					IDT54FCT241CT	♦† IDT					
					IDT54FCT241T	♦† IDT					
					IDT74FCT241AT	♦ IDT					
					IDT74FCT241CT	♦ IDT					
					IDT74FCT241T	♦ IDT					
				HC	74HC241	♦ Signetics	90				
				HCT	74HCT241	♦ Signetics					
				Octal, Three-State							
				HC	MM54HC540	† National					
					MM54HC541	† National					
					MM74HC540	National					
					MM74HC541	National					
				7-Line High Voltage							
				5XXX	TC5066B	Toshiba (3727)					
					TC5067B	Toshiba (3727)					
				10-Bit Buffer/Line Driver							

(Continued)

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Inverters (Cont'd)											
Hex				Hex Inverter Buffer, Three-State	54ACT368	♦† National		Octal Inverter/Line Driver, Three-State		(Cont'd)	
AC				74ACT368	National		70	AHCT	KS74AHCT466	Samsung	130
	74AC04	National		Hex Inverter (Open Drain)					KS74AHCT468	Samsung	
	74AC11004	Signetics		AC	TC74AC05	♦ Toshiba		Octal Inverter/Line Driver, Three-State			
	SN54AC11004	† TI		Hex, Open Collector				ACT	V54ACT468	† VTC	
	74AC11004	♦ TI		AC	CD54AC05	♦† Harris			V54ACT468	VTC	
	TC74AC04	Toshiba	5		CD74AC05	♦ Harris			V74ACT468	VTC	
ACT	CD54ACT04	♦† Harris		ACT	CD54ACT05	♦† Harris		Octal Schmitt Trigger Buffer/Line Driver			
	CD74ACT04	♦ Harris			CD74ACT05	♦ Harris		HC	74HC7541	Signetics	135
	MC74ACT04	♦ Motorola		AHCT	54AHCT05	♦‡ Ideal Semi		HCT	74HCT7541	Signetics	
	54ACT04	† National	10		74AHCT05	♦‡ Ideal Semi	(3532)	Octal Schmitt Trigger Buffer/Line Driver, Inverting			
	74ACT04	National			KS74AHCT05	Samsung	(3532)	HC	74HC7540	Signetics	
	74ACT11004	Signetics		HC	MM54HC05	† National		HCT	74HCT7540	Signetics	
	SN54ACT11004				MM74HC05	National		Nine Wide Schmitt Trigger Buffer, Inverting			
	74ACT11004	♦† TI			SN54HC05	♦† TI		HC	74HC9114	Signetics	140
	TC74ACT04	Toshiba			SN74HC05	♦ TI		HCT	74HCT9114	Signetics	
ACTQ	54ACTQ04	♦† National	15	HCT	54HCTLS05	♦‡ Ideal Semi		HC	74HC9015	Signetics	
	74ACTQ04	♦ National			74HCTLS05	♦‡ Ideal Semi	(3533)	HCT	74HCT9015	Signetics	
AHCT	54AHCT04	♦‡ Ideal Semi			MM54HCT05	† National		Nine-Wide Schmitt Trigger Buffer/Line Driver			
	74AHCT04	♦‡ Ideal Semi	(3532)		KS74HCTLS05	Samsung		HC	74HC9015	Signetics	
	KS74AHCT04	Samsung						HCT	74HCT9015	Signetics	
C	MM54C04	‡ Micrel	20	Hex Schmitt Trigger				HC	74HC9014	Signetics	145
	MM54C04	† National		AC	NJU74HC14	♦ NJR		HCT	74HCT9014	Signetics	
	MM74C04	National			MC74AC14	♦ Motorola					
H	54H04	† Rochester			74AC11014	Signetics		Bus Buffer, 10-Bit			
HC	CD54HCU04	† Harris			TC74AC14	♦ Toshiba			AM29C827AC	♦ AMD	
	CD54HC04	† Harris	25	ACT	MC74ACT14	♦ Motorola			AM29C828AC	♦ AMD	
	CD74HCU04	♦ Harris			74ACT11014	Signetics		Bus Interface Latch, 9-Bit			
	CD74HC04	♦ Harris		ACTQ	54ACTQ14	♦† National			AM29C843AC	♦ AMD	
	HD74HC04	Hitachi			74ACTQ14	♦ National		Bus Interface Latch, 10-Bit			
	M74HCU04	Mitsubishi	30	AHCT	54AHCT14	♦‡ Ideal Semi			AM29C841AC	♦ AMD	150
	MC74HC04A	♦ Motorola			74AHCT14	♦‡ Ideal Semi	(3532)	Bus Interface Register, 9-Bit			
	MM54HC04	† National			KS74AHCT14	Samsung	(3532)		AM29C821AC	♦ AMD	
	MM74HC04	National		HC	M74HC14	Mitsubishi		Bus Interface Register, 10-Bit			
	M74HC04	SGS-Thomson			TC74HC14A	Toshiba			AM29C823AC	♦ AMD	
	LR74HC04	Sharp		HCT	MC54HCT14A	♦† Motorola		Bus Transceiver, 9-Bit			
	74HC04	♦ Signetics	35		MC74HCT14A	♦ Motorola			AM29C863AC	♦ AMD	
	SN54HC04	♦† TI		HCTLS	KS74HCTLS14	Samsung		Bus Transceiver, 10-Bit			
	SN74HC04	♦ TI		4XXX	MC14106B	Motorola			AM29C861AC	♦ AMD	
	TC74HCU04A	Toshiba		Hex Unbuffered				NuBus Controller, 16-Bit			
	TC74HC04A	Toshiba		HC	NJU74HCU04	♦ NJR		ACT	SN74ACT2441	TI	155
HCT	GD74HCT04	GoldStar	40		GD74HCU04	GoldStar		NuBus Interface Controller			
	CD54HCT04	♦† Harris			MC54HCU04	† Motorola		ACT	SN74ACT2440	♦ TI	
	CD74HCT04	♦ Harris			MC74HCU04	Motorola		Parity Bus Transceiver, 8-Bit (9-Bit parity checker/generator)			
	54HCTLS04	♦‡ Ideal Semi	(3533)		MM54HCU04	† National			AM29C833AC	♦ AMD	
	74HCTLS04	♦‡ Ideal Semi	(3533)		MM74HCU04	National			AM29C853AC	♦ AMD	
	MC54HCT04A	† Motorola	45		M74HCU04	SGS-Thomson		Pipeline Register with SSR Diagnostics, 8-Bit			
	MC74HCT04A	Motorola			74HCU04	Signetics			AM29C818A	AMD	
	MM54HCT04	† National			SN54HCU04	TI		Test and Maintenance Bus Interface			
	MM74HCT04	National			SN74HCU04	TI		CMOS	HTW2000	♦† Honeywell	160
	MM74HCT34	National		Hex Three-State	MM70C96	‡ Micrel		Quad Bus Transceiver, Three-State			
	KS74HCTLS04	Samsung	50		MM70C98	† National		AHCT	KS74AHCT242	Samsung	
	M74HCT04	SGS-Thomson			MM80C96	National			KS74AHCT243	Samsung	
	74HCT04	♦ Signetics			MM80C98	National		HCTLS	KS74HCTLS242	Samsung	
	SN54HCT04	† TI			HEF40098B	Signetics			KS74HCTLS243	Samsung	
	TC74HCT04A	Toshiba		Octal Inverter/Line Driver, Three-State				Hex Bus Drivers, Three-State			
4XXX	GD4069UB	‡ GoldStar	55	ACT	V54ACT466	† VTC		HCTLS	KS74HCTLS365A	Samsung	165
	CD4069UB	‡ Harris			V54ACT466	VTC			KS74HCTLS366A	Samsung	
	CD4069UBE	Harris			V54ACT466	† VTC			KS74HCTLS367A	Samsung	
	CD4069A	‡ Micrel			V54ACT466	VTC			KS74HCTLS368A	Samsung	
	CD4069UB	‡ Micrel			V54ACT466	VTC		Octal Bidirectional Transceiver			
	MC14069UBC	Motorola	60		V54ACT468	† VTC		AC	MC74AC245	♦ Motorola	170
	CD4069C	National			V54ACT468	VTC			MC74AC620	♦ Motorola	
	CD4069M	† National			V74ACT466	VTC			MC74AC623	♦ Motorola	
	BU4069UB	ROHM			V74ACT466	VTC			MC74AC643	♦ Motorola	
	BU4584B	ROHM			V74ACT468	VTC			MC74AC646	♦ Motorola	
	HCC4069UB	† SGS-Thomson	65								
	HCF4069UB	♦ SGS-Thomson									
	HEF4069UB	† Signetics									
	TC4069UB	Toshiba	(3727)								

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MASTER SELECTION GUIDE

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line			
Bus-Oriented Circuits (Cont'd)				Octal Buffer/Line Driver, Three-State, Inverting (Cont'd)				Octal Buffer/Line Driver, Three-State, Inverting (Cont'd)						
Octal Bidirectional Transceiver (Cont'd)				5	ACT	CD54ACT240 *† Harris CD74ACT240 * Harris MC74ACT240 * Motorola 54ACT240 *† National 74ACT240 * National 74ACT11240 Signetics 74ACT11240 * TI V54ACT240 VTC V74ACT240 VTC	60	HCT	SN74HCT240 * TI TC74HCT240A Toshiba	125				
Octal Bidirectional Transceiver, Three-State ACQ					54ACQ245 † National 74ACQ245 National	PCT		P54PCT240 Performance P54PCT240A Performance P74PCT240 Performance P74PCT240A * Performance						
Octal Buffer/Line Driver AC					MC74AC540 * Motorola MC74AC541 * Motorola	4XXX		HEF40240B Signetics						
Octal Buffer/Line Driver ACT					MC74ACT540 * Motorola MC74ACT541 * Motorola	Octal Buffer/Line Driver, Three-State, Inverting (dual) AC			130					
Octal Buffer/Line Driver/Line Receiver, Three-State, Inverting HC					MC54HC240A *† Motorola MC54HC241A *† Motorola MC54HC244A *† Motorola MC74HC240A * Motorola MC74HC241A * Motorola MC74HC244A * Motorola	ACT		DPLACT240Y Dense-Pac DPLACT240Y Dense-Pac V54ACT540 † VTC V74ACT540 VTC						
Octal Buffer/Line Driver w/9-Bit Parity Generator/Checker, Three-State, Inverting AC					74AC11655 Signetics 74AC11656 Signetics	BCT		SN54BCT540 *† TI						
Octal Buffer/Line Driver with Parity Generator Checker, Inverting 4XXX					74ACT11655 Signetics 74ACT11656 Signetics	FCT		DPLFCT240Y Dense-Pac						
Octal Buffer/Line Driver/Three State CD74FCT244AT					Harris	HC		DPLHCT240Y Dense-Pac DPLHCT240Y Dense-Pac						
Octal Buffer/Line Driver/Three State/Inv CD74FCT240AT					Harris	HCT		DPLHCT240Y Dense-Pac SN54HCT540 † TI SN74HCT540 * TI						
Octal Buffer/Line Driver/Three-State CD54FCT244ATF3A					Harris	Octal Buffer/Line Driver, Three-State, True AC			140					
AC					74AC11241 Signetics 74AC11244 Signetics	54AC241 *† National 54AC244 *† National 74AC241 * National 74AC244 * National 74AC11241 TI 74AC11244 TI TC74AC241 Toshiba TC74AC244 Toshiba								
ACQ					54ACQ240 † National 54ACQ244 † National 74ACQ240 National 74ACQ244 National	ACT		CD54ACT241 *† Harris CD54ACT244 *† Harris CD74ACT241 * Harris CD74ACT244 * Harris 54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
ACT					74ACT11241 Signetics 74ACT11244 Signetics	80		Octal Buffer/Line Driver, Three-State, Inverting (Cont'd)						
ACTQ					54ACTQ240 † National 54ACTQ244 † National 74ACTQ240 National 74ACTQ244 National			54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
FCT					CD54FCT241 † Harris CD54FCT244 † Harris CD54FCT541 † Harris CD74FCT241 Harris CD74FCT244 Harris CD74FCT541 Harris			54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
HCTLS					KS74HCTLS465 Samsung KS74HCTLS466 Samsung KS74HCTLS467 Samsung KS74HCTLS468 Samsung			54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
Octal Buffer/Line Driver/Three-State/Inv CD54FCT240TF3A					Harris			54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
Octal Buffer/Line Driver, Three-State, Inverting AC					MC74AC240 * Motorola 54AC240 *† National 74AC240 * National 74AC11240 Signetics 74AC11240 * TI TC74AC240 Toshiba			54ACT241 *† National 54ACT244 *† National 74ACT241 * National 74ACT244 * National 74ACT11241 * TI 74ACT11244 * TI V54ACT241 † VTC V54ACT244 † VTC V74ACT241 VTC						
Octal Buffer/Line Driver, Three-State, Inverting (Cont'd)														

♦ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)				Octal Buffer/Line Driver, Three-State, True HCT				Octal Bus Transceiver HC			
Octal Buffer/Line Driver, Three-State, True FCT (Cont'd)				(Cont'd)				(Cont'd)			
IDT74FCT244AT				MM74HCT241	National			M74HC7640	SGS-Thomson		
° IDT				MM74HCT244	National			M74HC7643	SGS-Thomson		
IDT74FCT244C				KS74HCTLS241	Samsung			M74HC7645	SGS-Thomson		
° IDT				KS74HCTLS244	Samsung			SN54HC620	° TI		130
IDT74FCT244T				M74HCT241	SGS-Thomson		70	HCT	MC54HCT640A	° Motorola	
° IDT				M74HCT244	SGS-Thomson			MC74HCT640A	° Motorola		
° IDT				54HCT244	Signetics			Octal Bus Transceiver, Inverting FCT			
° IDT				74HCT244	° Signetics			QS29FCT2053	° Quality Semi		
QS74FCT2241	° Quality Semi		5	SN54HCT241	° TI		75	QS74FCT2544	° Quality Semi		135
(3614)				SN54HCT244	° TI			QS74FCT2648	° Quality Semi		
QS74FCT241	° Quality Semi			SN74HCT241	° TI			QS74FCT2651	° Quality Semi		
(3613)				SN74HCT244	° TI			(3614)			
QS74FCT244	° Quality Semi			TC74HCT241A	Toshiba		80	QS74FCT544	° Quality Semi		
(3613)				TC74HCT244A	Toshiba			(3614)			
QS74FCT2541	° Quality Semi			V74FCT244	VTC						
(3614)				V74FCT241	° VTC			Octal Bus Transceiver/Register AC			
QS74FCT541	° Quality Semi			P54PCT241	° Performance		85	CD54AC647	° Harris		140
(3613)				P54PCT241A	° Performance			CD74AC647	° Harris		
QS74FCT827	° Quality Semi		10	P54PCT244	° Performance			MC74AC648	° Motorola		
(3613)				P54PCT244A	° Performance			ACT	CD54ACT647	° Harris	
V54FCT241	° VTC			P74PCT241	° Performance			CD74ACT647	° Harris		
V54FCT244	° VTC			P74PCT241A	° Performance			MC74ACT648	° Motorola		
V74FCT244	° VTC			P74PCT244	° Performance			Octal Bus Transceiver/Register, Inverting AC			
				P74PCT244A	° Performance			CD54AC649	° Harris		145
								CD74AC649	° Harris		
HC	GD74HC244	GoldStar	15	4XXX	HEF40244B	Signetics	90	ACT	CD54ACT649	° Harris	
CD54HC241	° Harris			Octal Buffer/Line Driver, Three-State, True (Data Flow-Thru Pinout)							
CD54HC244	° Harris			CD4541BC	National			Octal Bus Transceiver/Register, Open Drain FCT			
CD74HC241	° Harris			CD4541BM	° National			CD54FCT653	° Harris		150
CD74HC244	° Harris			AC	MC74AC241	° Motorola		CD74FCT653	° Harris		
HD74HC241	Hitachi		20	ACT	MC74ACT241	° Motorola	95	Octal Bus Transceiver/Register with Direction Pin, Three-State, True AC			
HD74HC244	Hitachi			AHCT	54AHCT541	° Ideal Semi		CD54AC646	° Harris		155
M74HC241	Mitsubishi			(3533)				CD54AC648	° Harris		
M74HC244	Mitsubishi			74AHCT541	° Ideal Semi			CD74AC646	° Harris		
MM54HC241	° National		25	(3533)				CD74AC648	° Harris		
MM54HC244	° National			KS74AHCT541	Samsung			54AC646	° National		
MM74HC241	National			HC	HCF4541B	SGS-Thomson	100	54AC648	° National		
MM74HC244	National			LR74HC541	Sharp			74AC646	° National		
M74HC241	SGS-Thomson			SN54HC541	° TI			74AC648	° National		
M74HC244	SGS-Thomson			SN74HC541	° TI			74ACT11646	° TI		160
LR74HC241	Sharp		30	TC74HC541A	Toshiba			74ACT11648	° TI		
LR74HC244	Sharp			HCT	TC74HCT541A	Toshiba	105	TC74AC646	Toshiba		
54HC244	Signetics			Octal Buffer/Line Driver, Three-State, True (dual)				TC74AC648	Toshiba		
74HC244	° Signetics			AC	DPLACT244Y	Dense-Pac		ACT	CD54ACT646	° Harris	
SN54HC241	° TI			ACT	DPLACT244Y	Dense-Pac		CD54ACT648	° Harris		165
SN54HC244	° TI			AHCT	DPLACT244Y	Dense-Pac		CD74ACT646	° Harris		
SN74HC241	° TI		35	FCT	DPLACT244Y	Dense-Pac		CD74ACT648	° Harris		
SN74HC244	° TI			HC	DPLHCT244Y	Dense-Pac		54ACT646	° National		
TC74HC241A	Toshiba			HCT	DPLHCT244Y	Dense-Pac		74ACT646	° National		
TC74HC244A	Toshiba			Octal Buffer/Line Driver, Three-State, True (dual package)				74ACT11646	° TI		170
TC74HC7241A	Toshiba		40	HC	DPLXXH244Y	Dense-Pac		74ACT11648	° TI		
TC74HC7244A	Toshiba			Octal Bus Buffer, Three-State				AHCT	54AHCT646	° Ideal Semi	
HCT	MV74HCT241	GEC Plessey		NJU74HC240	° NJR		110	(3533)			
MV74HCT244	GEC Plessey			NJU74HC241	° NJR			54AHCT648	° Ideal Semi		
54HCT241SOS	GEC Plessey			NJU74HC244	° NJR		115	(3533)			
54HCT244SOS	GEC Plessey			Octal Bus Transceiver/Three-State				74AHCT646	° Ideal Semi		
74HCT241	GEC Plessey		45	CD54FCT245TF3A	Harris			(3533)			
74HCT244	GEC Plessey			NJU74HC245	° NJR			74AHCT648	° Ideal Semi		
CD54HCT241	° Harris			NJU74HC643	° NJR			(3533)			
CD54HCT244	° Harris			Octal Bus Transceiver				KS74AHCT646	Samsung		175
CD74HCT241	° Harris			NJU74HC620	° NJR		120	KS74AHCT648	Samsung		
CD74HCT244	° Harris			NJU74HC623	° NJR			BCT	SN54BCT646	° TI	
HD74HCT241	Hitachi			NJU74HC645	° NJR			SN54BCT648	° TI		
HD74HCT244	Hitachi			AC	TC74AC623	° Toshiba		SN74BCT646	° TI		180
54HCTLS244	° Ideal Semi		55	ACT	TC74ACT646	° Toshiba		SN74BCT648	° TI		
(3534)				TC74ACT648	Toshiba			FCT	IDT54FCT646	° IDT	
74HCTLS244	° Ideal Semi			HC	M74HC7240	° SGS-Thomson	125	IDT54FCT646A	° IDT		
(3534)				M74HC7241	° SGS-Thomson			IDT54FCT646AT	° IDT		
IDT74FCT241	° IDT			M74HC7244	° SGS-Thomson			IDT54FCT646T	° IDT		
IDT74FCT241A	° IDT			Octal Bus Transceiver				IDT54FCT648	° IDT		185
IDT74FCT241C	° IDT			NJU74HC620	° NJR			IDT54FCT648A	° IDT		
M74HCT241	Mitsubishi			NJU74HC623	° NJR			Octal Bus Transceiver, Inverting FCT			
M74HCT244	Mitsubishi			NJU74HC645	° NJR			QS29FCT2053	° Quality Semi		
MC54HCT241A	° Motorola		60	AC	TC74AC623	° Toshiba		QS74FCT2544	° Quality Semi		135
MC54HCT244A	° Motorola			ACT	TC74ACT646	° Toshiba		QS74FCT2648	° Quality Semi		
MC74HCT241A	Motorola			TC74ACT648	Toshiba			QS74FCT2651	° Quality Semi		
MC74HCT244A	° Motorola			HC	M74HC7240	° SGS-Thomson	125	(3614)			
MM54HCT241	° National			M74HC7241	° SGS-Thomson						
MM54HCT244	° National		65	M74HC7244	° SGS-Thomson						

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Bus-Oriented Circuits (Cont'd)												
Octal Bus Transceiver/Register with Direction Pin, Three-State, True FCT (Cont'd)				Octal Bus Transceiver/Register with Dual Enable, Three-State, Inverting (Cont'd)				Octal Bus Transceiver with Direction Pin, Three-State, Inverting (dual)				
	IDT74FCT646	* IDT	5	ACT	74ACT11651	TI	65	AC	DPLAC640Y	Dense-Pac	125	
	IDT74FCT646A	* IDT			74ACT11652	TI			74AC11640	TI		
	IDT74FCT646AT	* IDT			AHCT	KS74AHCT652	Samsung		TC74AC640	Toshiba		
	IDT74FCT646T	* IDT			BCT	SN54BCT651	† TI		ACT	DPLACT640Y	Dense-Pac	130
	IDT74FCT648	* IDT				SN54BCT652	† TI			SN54ACT11640	* † TI	
	IDT74FCT648A	* IDT				SN74BCT651	TI			74ACT11640	* TI	
			10		SN74BCT652	TI			TC74ACT640	Toshiba		
						SN74BCT652	TI			V54ACT640	† VTC	
										V74ACT640	VTC	
												135
			15									140
			20									145
			25									150
			30									155
			35									160
			40									165
			45									170
			50									175
			55									180
			60									185
Octal Bus Transceiver/Register with Open Drain, Three-State, True FCT				Octal Bus Transceiver/Register with Dual Enable, Three-State, True FCT				Octal Bus Transceiver with Parity HCTLS				
	CD54FCT647	† Harris	55	ACT	CD54ACT651	* † Harris	60	AC	74AC11470	TI	120	
	CD74FCT647	Harris			74AC11471	TI			74AC11651	TI		
					74AC11651	TI			74AC11652	TI		
		</										

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)				Octal Bus Transceiver with 8-Bit Parity Generator (Cont'd)				Octal Bus Transceiver, Three-State, True (Cont'd)			
Octal Bus Transceiver with Registers, Three-State				PCT				AHCT			
AHCT	KS74AHCT651	Samsung		P54PCT657	⊕ Performance			54AHCT245	⊕ Ideal Semi	(3532)	
HCTLS	KS74HCTLS651	Samsung		P54PCT657A	⊕ Performance			74AHCT245	⊕ Ideal Semi	(3532)	
	KS74HCTLS652	Samsung		P74PCT657	⊕ Performance		65	KS74AHCT245	Samsung		130
				P74PCT657A	⊕ Performance			KS74AHCT645	Samsung		
Octal Bus Transceiver with Storage, Open-Collector FCT				Octal Bus Transceiver/Three-State				BCT			
FCT	IDT54FCT621AT			CD54FCT245ATF3A	Harris			SN54BCT245	† TI		
	IDT54FCT621CT	† IDT	5	CD74FCT245AT	Harris			SN74BCT1245	TI		
	IDT54FCT621T	† IDT					70	SN74BCT245	TI		
	IDT54FCT622AT	† IDT						FCT			
	IDT54FCT622CT	† IDT						DPLFCT245Y	† Dense-Pac		135
	IDT54FCT622T	† IDT						IDT54FCT245	⊕† IDT		
	IDT54FCT621AT	† IDT	10					IDT54FCT245A	⊕† IDT		
	IDT54FCT621CT	† IDT						IDT54FCT245AT	⊕† IDT		
	IDT54FCT621T	† IDT						IDT54FCT245C	⊕† IDT		
	IDT54FCT622AT	† IDT						IDT54FCT245CT	⊕† IDT		
	IDT54FCT622CT	† IDT	15					IDT54FCT245T	⊕† IDT		140
	IDT54FCT622T	† IDT						IDT54FCT645	⊕† IDT		
Octal Bus Transceiver with Dual Enable, Three-State, True								IDT54FCT645A	⊕† IDT		
AC	CD54AC623	⊕ Harris		Octal Bus Transceiver, Three-State Inputs/Outputs				IDT74FCT245	⊕† IDT		
	CD74AC623	⊕ Harris		HCT	MV74HCT545	GEC Plessey	80	IDT74FCT245A	⊕† IDT		
	74AC11620	⊕ TI		PCT	P54PCT545	⊕ Performance		IDT74FCT245AT	⊕† IDT		
	74AC11623	TI			P54PCT545A	⊕ Performance					
	TC74AC620	Toshiba			P74PCT545	⊕ Performance					
ACT	CD54ACT623	† Harris			P74PCT545A	⊕ Performance					
	CD74ACT623	† Harris		Octal Bus Transceiver, Three-State, Inverting							
	74ACT11620	⊕ TI		FCT	CD54FCT640	† Harris	85				
	74ACT11623	⊕ TI			CD74FCT640	Harris					
	V54ACT620	† VTC			QS29FCT53	⊕ Quality Semi					
	V54ACT623	† VTC	25		QS74FCT651	⊕ Quality Semi	(3613)				
	V74ACT620	VTC					(3613)				
	V74ACT623	VTC									
BCT	SN54BCT623	† TI	30	HC	CD54HC242	† Harris					
	SN74BCT620	TI			CD74HC242	Harris					
	SN74BCT623	TI			HD74HC242	Hitachi	90				
FCT	IDT54FCT620AT				M74HC242	Mitsubishi					
	IDT54FCT620CT	† IDT			MC54HC242	† Motorola					
	IDT54FCT620T	† IDT			MC54HC640A	⊕† Motorola					
	IDT54FCT623AT	† IDT			MC74HC242	Motorola					
	IDT54FCT623CT	† IDT	35		MC74HC640A	⊕ Motorola					
	IDT54FCT623T	† IDT			MM54HC242	† National					
	IDT74FCT620AT	⊕ IDT			MM74HC242	National					
	IDT74FCT620CT	⊕ IDT			M74HC242	SGS-Thomson					
	IDT74FCT620T	⊕ IDT			LR74HC242	Sharp					
	IDT74FCT623AT	⊕ IDT	40		74HC242	Signetics					
	IDT74FCT623CT	⊕ IDT			SN54HC242	† TI	100				
	IDT74FCT623T	⊕ IDT			SN74HC242	⊕ TI					
					TC74HC242A	Toshiba					
HC	HD74HC620	Hitachi	45	HCT	CD54HCT242	† Harris	105	HC	GD74HC245	GoldStar	
	HD74HC623	Hitachi			CD74HCT242	Harris			CD54HC243	† Harris	
	MM54HC620	† National			HD74HCT242	Hitachi			CD54HC245	⊕† Harris	
	MM54HC623	† National			74HCT242	Signetics			CD74HC243	Harris	
	MM74HC620	National			SN74HCT242	⊕ TI			CD74HC245	⊕ Harris	
	MM74HC623	National							HD74HC245	Hitachi	
	M74HC620	SGS-Thomson	50						M74HC243	Mitsubishi	
	M74HC623	SGS-Thomson							M74HC245	Mitsubishi	
	SN54HC623	† TI							M74HC245-1	Mitsubishi	
	SN74HC620	⊕ TI							M74HC645	Mitsubishi	
	SN74HC623	⊕ TI							M74HC645-1	Mitsubishi	
	TC74HC620A	Toshiba	55						MM54HC243	† National	
	TC74HC623A	Toshiba							MM54HC245A	† National	
HCT	SN74HCT620	TI							MM74HC243	National	
	SN74HCT623	TI							MM74HC245A	National	
									M74HC243	SGS-Thomson	
Octal Bus Transceiver with 8-Bit Parity Generator/Checker, Three-State, True									M74HC245	SGS-Thomson	
AC	74AC11657	TI							LR74HC243	Sharp	
ACT	54ACT657	† National							74HC243	Signetics	
	74ACT657	National							74HC245	⊕ Signetics	
	74ACT11657	⊕ TI	60						SN54HC243	† TI	
									SN54HC245	† TI	
									SN54HC645	† TI	
									SN74HC243	TI	
									SN74HC245	TI	
									SN74HC645	TI	

† Mil Temp Range (−55° to 125° C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

⊕ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)											
Octal Bus Transceiver, Three-State, True (Cont'd)				Octal Bus Transceiver, Three-State, True/Inverting HCT (Cont'd)				Octal Transceiver/Register with Dual Enable, Three-State, Inverting ACT (Cont'd)			
HC	TC74HC243A	Toshiba		54HCTLS643	◊ Ideal Semi	(3534)		74ACT11651	Signetics		125
	TC74HC245A	Toshiba		74HCTLS643	◊ Ideal Semi	(3534)		74ACT11652	Signetics		
HCT	MV74HCT245	GEC Plessey		M74HCT643-1	Mitsubishi		70	Octal Transceiver with Direction Pin, Three-State AC	74AC11245	Signetics	
	54HCT245SOS	GEC Plessey		MM54HCT643	† National			74AC11640	Signetics		
	74HCT245	GEC Plessey	5	KS74HCTLS643	Samsung			ACT	74ACT11245	Signetics	130
	CD54HCT243	† Harris		M74HCT643	SGS-Thomson				74ACT11640	Signetics	
	CD54HCT245	◊ Harris		74HCT643	Signetics		75	Octal Transceiver with Dual Enable, Three-State, Inverting AC	74AC11620	Signetics	
	CD74HCT243	Harris		SN74HCT643	◊ TI			74AC11623	Signetics		
	CD74HCT245	◊ Harris		TC74HCT643A	Toshiba			ACT	74ACT11620	Signetics	
	HD74HCT243	Hitachi	10						74ACT11623	Signetics	
	HD74HCT245	Hitachi		PCT	P54PCT643	◊ Performance		Octal Transceiver with 8-Bit Parity Generator/Checker AC	74AC11657	Signetics	135
	M74HCT245-1	Mitsubishi			P54PCT643A	◊ Performance		ACT	74ACT11657	Signetics	
	M74HCT645-1	Mitsubishi			P74PCT643	◊ Performance		Octal Transceiver, Three-State, True/Inverting AC	74AC11643	Signetics	
	MC54HCT245A	◊ Motorola			P74PCT643A	◊ Performance		ACT	74ACT11643	Signetics	
	MC74HCT245A	◊ Motorola	15	Octal Latched Transceiver with Dual Enable, Three-State AC	74AC11543	Signetics	80				
	MM54HCT245	† National			74AC11544	Signetics		Octal Transceiver, Three-State, True/Inverting AC	74AC11643	Signetics	
	MM74HCT245	◊ National		ACT	74ACT11543	Signetics		ACT	74ACT11643	Signetics	
	P54PCT245A	◊ Performance			74ACT11544	Signetics		8-Bit Bus Interface D-Type Latches, Three-State AHCT	KS74AHCT845	Samsung	140
	P74PCT245A	◊ Performance		Octal Register-Transceiver/Three-State	CD54FCT543ATF3A	Harris	20		KS74AHCT846	Samsung	
	M74HCT245	SGS-Thomson	20	Octal Register-Transceiver/Three-State	CD54FCT543TF3A	Harris		8-Bit Bus Interface Registers, Three-State HCTLS	KS74HCTLS825	Samsung	
	74HCT243	Signetics			CD74FCT543AT	Harris			KS74HCTLS826	Samsung	
	74HCT245	◊ Signetics		FCT	CD54FCT543	† Harris	25		KS74HCTLS845	Samsung	
	SN54HCT245	† TI			CD74FCT543	Harris			KS74HCTLS846	Samsung	
	SN74HCT243	◊ TI		Octal Register-Transceiver, Three-State, Inverting FCT	CD54FCT544	† Harris		8-Bit Bus Transceiver with Parity Checker/Generator PCT	P54PCT833A	◊ Performance	145
	SN74HCT245	◊ TI			CD74FCT544	Harris			P54PCT833B	◊ Performance	
	SN74HCT645	◊ TI		Octal Registered Transceiver with Dual Enable, Three-State, Inverting AC	74AC11544	TI	30		P74PCT833A	◊ Performance	
	TC74HCT245A	Toshiba		ACT	54ACT543	† National			P74PCT833B	◊ Performance	
PCT	P54PCT245	◊ Performance			54ACT544	† National		8-Bit Parity Bus Transceiver with Latch	AM29C853A	AMD	
	P54PCT645	◊ Performance			74ACT543	National		8-Bit Parity Bus Transceiver with Register	AM29C833A	AMD	150
	P54PCT645A	◊ Performance			74ACT544	National					
	P74PCT245	◊ Performance			74ACT11544	TI		9-Bit Bus Interface Register, Three-State, True FCT	IDT54FCT823A		
	P74PCT645	◊ Performance							◊† IDT		
	P74PCT645A	◊ Performance			BCT	SN54BCT543	◊† TI		IDT54FCT823B	◊† IDT	
4XXX	HEF40245B	Signetics				SN54BCT544	† TI		IDT74FCT823A	◊ IDT	155
Octal Bus Transceiver, Three-State, True (dual) AC	DPLAC245Y	Dense-Pac				SN74BCT543	◊ TI		IDT74FCT823B	◊ IDT	
ACT	DPLACT245Y	Dense-Pac				SN74BCT544	TI		V54FCT823A	◊† VTC	
HC	DPLHC245Y	Dense-Pac							V74FCT823A	◊† VTC	
HCT	DPLHCT245Y	Dense-Pac									
Octal Bus Transceiver, Three-State, True (dual package) HC	DPLXX245Y	Dense-Pac									
	DPLXX645Y	Dense-Pac									
Octal Bus Transceiver, Three-State, True/Inverting AC	74AC11643	◊ TI									
	TC74AC643	Toshiba									
ACT	74ACT11643	◊ TI									
	V54ACT643	† VTC									
	V74ACT643	VTC									
AHCT	54AHCT643	◊ Ideal Semi	(3533)								
	74AHCT643	◊ Ideal Semi	(3533)								
	KS74AHCT643	Samsung									
FCT	CD54FCT643	† Harris									
	CD74FCT643	Harris									
HC	CD54HC643	† Harris									
	CD74HC643	Harris									
	HD74HC643	Hitachi									
	M74HC643	Mitsubishi									
	M74HC643-1	Mitsubishi									
	MM54HC643	† National									
	MM74HC643	National									
	M74HC643	SGS-Thomson									
	LR74HC643	Sharp									
	74HC643	Signetics									
	SN54HC643	† TI									
	SN74HC643	TI									
	TC74HC643A	Toshiba									
HCT	CD54HCT643	† Harris									
	CD74HCT643	Harris									
(Continued)				(Continued)				(Continued)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)				10-Bit Bus Interface Register, Three-State, Non-Inverting				Presetable Synchronous, Asynchronous Clear			
9-Bit Bus Transceiver, Three-State, Inverting				HCTLS				AC			
ACT				AM29C821A				54AC161			
V54ACT864				AMD				† National			
V74ACT864				K574HCTLS841				74AC161			
† VTC				Samsung				74AC11161			
VTC				10-Bit Bus Interface Register, Three-State, True				TC74AC161			
BCT				FCT				CD54ACT161			105
SN74BCT29864				IDT54FCT821A				† Harris			
† TI				† IDT				MC74ACT161			110
FCT				IDT54FCT821A				† Motorola			
IDT54FCT864A				† IDT				MC74ACT163			110
† IDT				IDT54FCT821B				54ACT161			
† IDT				IDT54FCT821B				† National			120
Q574FCT2864				† IDT				74ACT161			
◊ Quality Semi				IDT54FCT821C				† TI			125
(3614)				IDT54FCT821C				TC74ACT161			
Q574FCT864				† IDT				◊ Toshiba			130
◊ Quality Semi				IDT54FCT821CT				◊ Toshiba			
(3613)				† IDT				TC74ACT163			135
V54FCT864A				† IDT				54AHCT161			
† VTC				IDT74FCT821A				◊ Ideal Semi			140
V74FCT864A				◊ IDT				(3532)			
† VTC				IDT74FCT821AT				74AHCT161			145
† VTC				◊ IDT				◊ Ideal Semi			
† VTC				IDT74FCT821AT				(3532)			150
† VTC				IDT74FCT821AT				KS74AHCT161			
† VTC				† IDT				Samsung			155
† VTC				IDT74FCT821B				MM54C161			
† VTC				◊ IDT				† Micrel			160
† VTC				IDT74FCT821C				MM54C161			
† VTC				◊ IDT				† National			165
† VTC				IDT74FCT821CT				MM74C161			
† VTC				† IDT				† National			170
† VTC				V54FCT821A				Cell			
† VTC				† VTC				SN74161A			175
† VTC				V74FCT821A				† TI			
† VTC				† VTC				SN74161A-Cell			180
† VTC				† VTC				† TI			
† VTC				† VTC				FCT			185
† VTC				† VTC				IDT54FCT161			
† VTC				† VTC				† IDT			190
† VTC				† VTC				IDT54FCT161A			
† VTC				† VTC				† IDT			195
† VTC				† VTC				IDT74FCT161			
† VTC				† VTC				† IDT			200
† VTC				† VTC				IDT74FCT161A			
† VTC				† VTC				† IDT			205
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			210
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			215
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			220
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			225
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			230
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			235
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			240
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			245
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			250
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			255
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			260
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			265
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			270
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			275
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			280
† VTC				† VTC				† IDT			
† VTC				† VTC				† IDT			285
† VTC											

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Counters, Binary (Cont'd)				Presettable Up/Down (Cont'd)				Programmable Divide-by-N, 4-Bit (Cont'd)				
Presettable Synchronous, Synchronous Clear (Cont'd)				ACT				4XXX				
AC	74AC11163	TI	5	74ACT11569	TI	(Cont'd)	70	HEF4526B	Signetics	(3727)	140	
	TC74AC163	Toshiba		74ACT11579	TI			TC4526B	Toshiba			
ACT	CD54ACT163	*† Harris		C	MM54C193	‡ Micrel		Programmable Divider				
	CD74ACT163	* Harris			MM54C193	† National		HC	M74HC7292	SGS-Thomson		
	54ACT163	† National		FCT	IDT54FCT191	◊† IDT			M74HC7294	SGS-Thomson		
	74ACT163	National	10	IDT54FCT191A	◊† IDT	75	Ripple Carry/Binary Counter/Divider					
	74ACT11163	TI		IDT74FCT191	◊† IDT		NJU4020B	NJR	145			
AHCT	54AHCT163	◊‡ Ideal Semi		IDT74FCT191A	◊† IDT		NJU4040B	NJR				
	74AHCT163	◊‡ Ideal Semi		HC	GD74HC191		GoldStar	Synchronous, Asynchronous Clear, Up/Down				
	KS74AHCT163	Samsung			CD54HC191		*† Harris	FCT		IDT54FCT193	◊† IDT	
C	MM54C163	‡ Micrel	15		CD54HC193	*† Harris	80		IDT54FCT193A	◊† IDT	150	
	MM54C163	† National			CD54HC4516	† Harris			IDT74FCT193	◊† IDT		
	MM74C163	National			CD74HC191	* Harris			IDT74FCT193A	◊† IDT		
Cell	SN74163A	TI			CD74HC193	* Harris		HC	M74HC193	Mitsubishi		
FCT	IDT54FCT163	◊† IDT		20		CD74HC4516	Harris	85	Synchronous Presettable 8-Bit, Asynchronous Reset			
	IDT54FCT163A	◊† IDT			HD74HC191	Hitachi	AC		74AC11461	Signetics	155	
	IDT74FCT163	◊† IDT			HD74HC193	Hitachi	ACT		74ACT11461	Signetics		
	IDT74FCT163A	◊† IDT			M74HC191	Mitsubishi	Synchronous Presettable 4-Bit, Asynchronous Reset					
					MM54HC191	† National	ACT		74ACT11161	Signetics		
HC	CD54HC163	*† Harris	25		MM54HC193	† National	90	Synchronous Presettable 4-Bit, Synchronous Reset				
	CD74HC163	* Harris			MM74HC193	National		ACT	74ACT11163	Signetics	160	
	HD74HC163	Hitachi			HCF40193B	SGS-Thomson		Synchronous, Presettable 4-Bit Up/Down with Synchronous/Asynchronous Reset				
	MM54HC163	† National			M74HC191	SGS-Thomson		AC	MC74AC569	◊ Motorola		
	MM74HC163	National			M74HC193	SGS-Thomson			74AC11569	Signetics		
	MN74HC163	◊ Panasonic	30		74HC191	* Signetics	95		74ACT11569	Signetics	165	
	M74HC163	SGS-Thomson			74HC193	* Signetics		Synchronous Presettable 4-Bit Binary Counter, Asynchronous Reset				
	LR74HC163	Sharp			74HC4516	Signetics		AC	74AC11161	Signetics		
	74HC163	* Signetics			TC74HC193A	Toshiba			74AC11163	Signetics		
	SN54HC163	TI			US74HC191	Universal	100	Synchronous Presettable 8-Bit, Synchronous Reset				
	SN74HC163	TI	HCT	CD54HCT191	† Harris	AC		74AC11463	Signetics	170		
	TC74HC163A	Toshiba		CD54HCT193	*† Harris	ACT		74ACT11463	Signetics			
	US74HC163	Universal		CD54HCT4516	† Harris	Synchronous 4-Bit HCTLS						
				CD74HCT191	* Harris	54HCTLS163A		◊‡ Ideal Semi	(3534)			
				CD74HCT193	* Harris							
HCT	CD54HCT163	*† Harris	35		CD74HCT4516	Harris	105	Synchronous 4-Bit Up/Down				
	CD74HCT163	* Harris			MM54HCT191	† National		AHCT	KS74AHCT169	Samsung	175	
	KS74HCTLS163	Samsung			MM54HCT193	† National		Synchronous 8-Bit				
	74HCT163	* Signetics			MM74HCT191	National		AC	74AC11461	TI		
					MM74HCT193	National			74AC11463	TI		
HCTLS	74HCTLS163A	◊‡ Ideal Semi	40		74HCT191	* Signetics	110	ACT	74ACT11461	TI	180	
	KS74HCTLS163A	Samsung			74HCT193	* Signetics			74ACT11463	TI		
					74HCT4516	Signetics		Synchronous 8-Bit Up/Down				
								AC	74AC11469	TI		
								ACT	74ACT11469	TI		
4XXX	CD40163B	† Harris	45	4XXX	CD40193B	† Harris	115	Synchronous 8-Bit with Input Registers, Asynchronous Reset				
	CD40163BE	Harris			CD40193BE	Harris		AC	74AC11592	Signetics	185	
	CD40163B	‡ Micrel			CD4516B	† Harris			74AC11593	Signetics		
	MC14163BC	Motorola			CD4516BE	Harris		ACT	74ACT11592	Signetics		
	CD40163BC	National			CD40193B	‡ Micrel			74ACT11593	Signetics		
	CD40163BM	† National	50		CD4516B	‡ Micrel	120	Synchronous 8-Bit with Output Registers, Asynchronous Reset				
	F40163BC	National			MC14516BC	Motorola		AC	74AC11590	Signetics	190	
	F40163BM	National			CD40193BC	National			74ACT11590	Signetics		
	HCC40163B	† SGS-Thomson			CD40193BM	† National		ACT	74ACT11590	Signetics		
	HCF40163	SGS-Thomson			CD4516BC	National		Up/Down, Synchronous, 4-Bit				
	HEF40163B	Signetics	55		CD4516BM	† National	125	HC	HD74HC669	Hitachi	195	
	TC40163B	Toshiba (3727)			HCC4516B	† SGS-Thomson		Dual Synchronous				
Presettable Up/Down					HCF4516B	SGS-Thomson		AHCT	NJU74HC393	◊ NJR		
AC	CD54AC191	*† Harris			HEF40193B	Signetics			54AHCT393	◊‡ Ideal Semi		
	CD54AC193	*† Harris			HEF4516B	Signetics			74AHCT393	◊‡ Ideal Semi		
	CD74AC191	* Harris	60		TC40193B	Toshiba (3727)	130		KS74AHCT393	Samsung	200	
	CD74AC193	* Harris			TC4516B	Toshiba (3727)		Cell				
	54AC191	† National						SN74393	TI			
	74AC191	National						CD54HC393	*† Harris			
	74AC11168	TI						CD54HC4520	† Harris			
	74AC11191	TI	65	Presettable 8-Bit Down	TC74HC40103A	Toshiba	135		CD74HC393	* Harris	205	
	74AC11193	TI		HC	CD40103B	† Harris			CD74HC4520	Harris		
	74AC11569	TI		4XXX	CD40103BE	Harris			HD74HC393	Hitachi		
					HCC40103B	† SGS-Thomson			HD74HC4520	Hitachi		
					HCF40103B	SGS-Thomson						
ACT	CD54ACT191	*† Harris	70		TC40103B	Toshiba (3727)	140	Programmable Divide-by-N, 4-Bit				
	CD54ACT193	*† Harris						4XXX	GD4526B	GoldStar	(Continued)	
	CD74ACT191	* Harris							MC14526BC	Motorola		
	CD74ACT193	* Harris							CD4526BC	National		
	74ACT11168	TI							CD4526BM	† National		
	74ACT11191	TI	75				(Continued)					
	74ACT11193	TI										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Counters, Binary (Cont'd)				4-Bit Up/Down, Asynchronous Load HC (Cont'd)				8-Bit, Down HCT (Cont'd)			
Dual Synchronous HC (Cont'd)	MC54HC393	† Motorola	5	SN74HC191	TI	(3534)	60	CD54HCT40103	*† Harris	115	(3534)
	MC74HC393	Motorola		SN74HC193	TI			CD74HCT40103	* Harris		
	MM54HC393	† National		TC74HC191A	Toshiba			74HCT40103	* Signetics		
	MM74HC393	National		HCT	54HCTLS191	◊‡ Ideal Semi		8-Bit Synchronous AC	74AC11579	TI	
	MM74HC4520	National			74HCTLS191	◊‡ Ideal Semi		8-Bit Synchronous Directional ACT	74ACT11867	TI	
	M74HC393	SGS-Thomson			KS74HCTLS191	Samsung			74ACT11869	TI	
	LR74HC393	Sharp		4-Bit Up/Down Synchronous AC	54AC169	† National		8-Bit with Bidirectional Input Register/Counter Output HCTLS	54HCTLS593	◊‡ Ideal Semi	
	74HC393	* Signetics			74AC169	National			74HCTLS593	◊‡ Ideal Semi	
	74HC4520	Signetics			74AC11169	TI			KS74HCTLS593	Samsung	
	SN54HC393	† TI		ACT	74ACT11169	TI		8-Bit with Input Registers AC	74AC11592	TI	120
HCT	CD54HCT393	*† Harris	10	4-Bit with Asynchronous Clear FCT	Q574FCT161	◊ Quality Semi	15		74AC11593	TI	
	CD54HCT4520	† Harris			Q574FCT2161	◊ Quality Semi		ACT	74ACT11592	TI	
	CD74HCT393	* Harris		4-Bit with Synchronous Clear FCT	Q574FCT163	◊ Quality Semi			74ACT11593	TI	
	CD74HCT4520	Harris			Q574FCT2163	◊ Quality Semi		AHCT	54AHCT592	◊‡ Ideal Semi	
	54HCTLS393	◊‡ Ideal Semi		5, 6, 7, 8, 9-Stage 5XXX	TC5048	Toshiba			54AHCT593	◊‡ Ideal Semi	
		(3534)				(3727)			74AHCT592	◊‡ Ideal Semi	
	74HCTLS393	◊‡ Ideal Semi		7-Stage HC	CD54HC4024	† Harris			74AHCT593	◊‡ Ideal Semi	
		(3534)			CD74HC4024	Harris			KS74AHCT592	Samsung	
	KS74HCTLS393	Samsung			HD74HC4024	Hitachi		HC	KS74AHCT593	Samsung	
	74HCT393	* Signetics			M74HC4024	Hitachi			HD74HC592	Hitachi	135
4XXX	74HCT4520	Signetics	20		MC54HC4024	† Motorola	25		HD74HC593	Hitachi	
	GD4520B	GoldStar			MC74HC4024	Motorola			MM74HC592	National	
	CD4520B	† Harris			MM74HC4024	National			MM74HC593	National	
	CD4520BE	Harris			M74HC4024	SGS-Thomson			TC74HC592	Toshiba	
	CD4520B	† Micrel			LR74HC4024	Sharp			TC74HC593A	Toshiba	
	MC14520BC	Motorola			74HC4024	Signetics		HCTLS	54HCTLS592	◊‡ Ideal Semi	
	CD4520BC	National			SN54HC4024	† TI			74HCTLS592	◊‡ Ideal Semi	
	CD4520BM	† National			SN74HC4024	TI			KS74HCTLS592	Samsung	
	HCC4520B	† SGS-Thomson			TC74HC4024A	Toshiba		8-Bit with Output Registers AC	74AC11590	TI	
	HCF4520B	◊ SGS-Thomson						ACT	74ACT11590	TI	
Dual BCD Programmable HC	HEF4520B	Signetics	30	HCT	CD54HCT4024	† Harris	35	AHCT	54AHCT590	◊‡ Ideal Semi	140
	TC4520B	Toshiba			74HCT4024	Signetics			74AHCT590	◊‡ Ideal Semi	
		(3727)		4XXX	CD4024B	† Harris			74AHCT590	◊‡ Ideal Semi	
					CD4024BE	Harris			KS74AHCT590	Samsung	
					CD4024A	† Micrel			KS74AHCT591	Samsung	
					CD4024B	† Micrel		HC	HD74HC590	Hitachi	
					CD4024B	† Micrel			MM74HC590	National	
					MC14024BC	Motorola			SN54HC590A	† TI	
					CD4024BC	National			SN74HC590A	TI	
					CD4024BM	† National			TC74HC590	Toshiba	
Dual BCD Programmable HC			35		HCC4024B	† SGS-Thomson	40	HCTLS	54HCTLS590	◊‡ Ideal Semi	145
					HCF4024B	◊ SGS-Thomson			74HCTLS590	◊‡ Ideal Semi	
					HEF4024B	Signetics			KS74HCTLS590	Samsung	
					TC4024B	Toshiba			KS74HCTLS591	Samsung	
								8-Bit with Output Registers AC	74AC11590	TI	
								ACT	74ACT11590	TI	
								AHCT	54AHCT590	◊‡ Ideal Semi	
									74AHCT590	◊‡ Ideal Semi	
									KS74AHCT590	Samsung	
									KS74AHCT591	Samsung	
Dual BCD Programmable HC			40	7-Stage Counter	GD4737B	GoldStar	45	HC	HD74HC590	Hitachi	150
				7-Stage Ripple Counter AC	54AC4024	† National			MM74HC590	National	
					74AC4024	National			SN54HC590A	† TI	
				8-Bit AC	TC74AC393	Toshiba			SN74HC590A	TI	
				ACT	74ACT11269	TI			TC74HC590	Toshiba	
				HC	M74HC590	SGS-Thomson					
					M74HC592	SGS-Thomson					
					M74HC593	SGS-Thomson					
				8-Bit Bidirectional AC	54AC269	† National					
					74AC269	National					
Dual BCD Programmable HC			50	8-Bit, Down HC	CD54HC40103	*† Harris	55	HCTLS	54HCTLS590	◊‡ Ideal Semi	155
					CD74HC40103	* Harris			74HCTLS590	◊‡ Ideal Semi	
					M74HC40103	SGS-Thomson			KS74HCTLS590	Samsung	
					74HC40103	* Signetics			KS74HCTLS591	Samsung	
								12-Bit Asynchronous HC	NJU74HC4040	◊ NJR	
									SN54HC4040	◊† TI	
								12-Stage AC	MC74AC4040	◊ Motorola	
									CD54HC4040	*† Harris	
									CD74HC4040	* Harris	
									HD74HC4040	Hitachi	
Dual BCD Programmable HC			55				110		M74HC4040	Mitsubishi	160
									MM54HC4040	† National	
									MM74HC4040	National	
									M74HC4040	SGS-Thomson	
									74HC4040	* Signetics	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Counters, Binary (Cont'd)				Counters, Binary Count Up/Down				Counter/Divider, 10 Line Output HC (Cont'd)				
12-Stage HC		(Cont'd)		14-Stage with Oscillator 4XXX		(Cont'd)		MC54HC4017	† Motorola		110	
	SN74HC4040	TI			CD4060BC	National		MC74HC4017	Motorola			
	TC74HC4040A	Toshiba			CD4060BM	† National		MM54HC4017	† National			
HCT	CD54HCT4040	*† Harris			HCC4060B	† SGS-Thomson		MM74HC4017	National			
	CD74HCT4040	* Harris			HCF4060B	SGS-Thomson		M74HC4017	SGS-Thomson			
	74HCT4040	* Signetics			HEF4060B	Signetics		74HC4017	Signetics			
4XXX	GD4040B	† GoldStar		16-Bit Synchronous FCT	IDT49FCT661	IDT		SN74HC4017	TI		115	
	CD4040B	*† Harris						TC74HC4017A	Toshiba			
	CD4040BE	* Harris		Counters, Binary Count Up/Down				HCT	CD54HCT4017	† Harris		
	CD4040A	‡ Micrel		Asynchronous Presettable 4-Bit with Dual Clock				CD74HCT4017	Harris			
	CD4040B	‡ Micrel		AC	74AC11193	Signetics		74HCT4017	Signetics			
	MC14040BC	Motorola		ACT	74ACT11193	Signetics		4XXX	GD4017B	‡ GoldStar	120	
	CD4040BC	National		Presettable BCD Counter with 1 Asynchronous Reset				CD4017B	‡ Harris			
	CD4040BM	† National		HC	M74HC160	Mitsubishi		CD4017A	‡ Micrel			
	HCC4040B	† SGS-Thomson		Presettable BCD Up/Down Counter with Reset				CD4017B	‡ Micrel			
	HCF4040B	◊ SGS-Thomson		HC	M74HC192	Mitsubishi		MC14017BC	Motorola		125	
	HEF4040B	Signetics		Synchronous				CD4017BC	National			
	TC4040B	Toshiba (3727)		HC	NJU74HC192	◊ NJR		CD4017BM	† National			
14, 15, 16-Stage (with reset) 5XXX	TC5036	Toshiba (3727)		HCT	MM54HCT192	† National		HCC4017B	† SGS-Thomson			
					MM74HCT192	National		HCF4017B	◊ SGS-Thomson			
14-Bit	NJU74HC4020	◊ NJR		Synchronous Presettable 4-Bit				HEF4017B	Signetics		130	
14-Bit Asynchronous HC	SN54HC4020	◊† TI		AC	74AC11169	Signetics		TC4017B	Toshiba (3727)			
				ACT	74ACT11169	Signetics		Counter/Latch/Display Driver ICM7208 Harris				
14-Stage AC	MC74AC4020	◊ Motorola		Synchronous Presettable 8-Bit				Presettable, Fully Synchronous, Synchronous Clear				
HC	CD54HC4020	*† Harris		AC	74AC11269	Signetics		AC	MC74AC162	◊ Motorola		
	CD74HC4020	* Harris			74AC11469	Signetics			74AC11162	* TI		
	HD74HC4020	Hitachi		ACT	74ACT11269	Signetics		ACT	MC74ACT162	◊ Motorola		
	M74HC4020	Mitsubishi			74ACT11469	Signetics			74ACT11162	TI	135	
	MM54HC4020	† National		Synchronous 4-Bit				AHCT	KS74AHCT162	Samsung		
	MM74HC4020	National		HCTLS	KS74HCTLS169	Samsung		C	MM54C162	‡ Micrel		
	M74HC4020	SGS-Thomson		Binary Up/Down 4XXX	BU4516B	ROHM			MM54C162	† National		
	74HC4020	* Signetics							MM74C162	National		
	SN74HC4020	TI		4-Bit Synchronous, Presettable				HC	CD54HC162	*† Harris	140	
	TC74HC4020A	Toshiba		AC	TC74AC191	◊ Toshiba			CD74HC162	* Harris		
HCT	CD54HCT4020	*† Harris		HCTS	HCTS191MS	‡ Harris			HD74HC162	Hitachi		
	CD74HCT4020	* Harris		4-Bit with Asynchronous Clear					MC54HC162	† Motorola		
	74HCT4020	* Signetics		FCT	QS74FCT193	◊ Quality Semi (3613)			MC74HC162	Motorola		
4XXX	GD4020B	‡ GoldStar			QS74FCT2193	◊ Quality Semi (3614)			MM54HC162	† National	145	
	CD4020B	‡ Harris		4-Bit with Synchronous Clear					MM74HC162	National		
	CD4020BE	Harris		FCT	QS74FCT191	◊ Quality Semi (3613)			M74HC162	SGS-Thomson		
	CD4020A	‡ Micrel			QS74FCT2191	◊ Quality Semi (3614)			LR74HC162	Sharp		
	CD4020B	‡ Micrel		8-Bit with Synchronous/Asynchronous Reset					74HC162	* Signetics		
	MC14020BC	Motorola		AC	74AC11579	Signetics			SN74HC162	TI	150	
	CD4020BC	National		ACT	74ACT11579	Signetics			TC74HC162A	Toshiba		
	CD4020BM	† National		Counters, Decade					US74HC162	Universal		
	HCC4020B	† SGS-Thomson		Asynchronous Presettable BCD Decade Up/Down with Dual Clock				HCT	CD54HCT162	*† Harris	155	
	HCF4020B	◊ SGS-Thomson		AC	74AC11192	Signetics			CD74HCT162	* Harris		
	HEF4020B	Signetics		ACT	74ACT11192	Signetics			KS74HCTLS162	Samsung		
	TC4020B	Toshiba (3727)		Asynchronous Presettable Decade Up/Down with Single Clock					74HCT162	* Signetics		
14-Stage Ripple Counter with Oscillator				AC	74AC11190	Signetics		4XXX	CD40162B	† Harris		
AC	CD54AC7060	*† Harris		ACT	74ACT11190	Signetics			CD40162BE	Harris		
	CD74AC7060	* Harris		Counter/Divider, 7 Segment Display Output and Display Enable					CD40162B	‡ Micrel		
ACT	CD54ACT7060	*† Harris		4XXX	CD4026B	† Harris			MC14162BC	Motorola	160	
	CD74ACT7060	* Harris			CD4026BE	Harris			CD40162BC	National		
14-Stage with Oscillator					CD4033B	† Harris			CD40162BM	† National		
HC	CD54HC4060	† Harris			CD4033BE	Harris			HCF40162B	◊ SGS-Thomson		
	CD74HC4060	Harris			HCC4026B	† SGS-Thomson			HEF40162B	Signetics		
	HD74HC4060	Hitachi			HCF4026B	SGS-Thomson			TC40162B	Toshiba (3727)	165	
	MM54HC4060	† National			HCF4033B	SGS-Thomson			Presettable (sets to 0 or 9, divides by 2, 5 or 10)			
	MM74HC4060	National							C	MM54C90	† National	
	M74HC4060	SGS-Thomson							MM74C90	National		
	74HC4060	† Signetics							Presettable Synchronous, Asynchronous Clear			
	SN74HC4060	TI							AC	NJU74HC160	◊ NJR	170
	TC74HC4060A	Toshiba								MC74AC160	◊ Motorola	
HCT	CD54HCT4060	Harris								74AC11160	* TI	
	CD74HCT4060	Harris								TC74AC160	Toshiba	
	74HCT4060	† Signetics							ACT	MC74ACT160	◊ Motorola	
4XXX	CD4060B	† Harris								74ACT11160	TI	
	CD4060BE	Harris							AHCT	KS74AHCT160	Samsung	175
	MC14060B	◊ Motorola							C	MM54C160	‡ Micrel	
			(Continued)				(Continued)				(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Counters, Decade (Cont'd)											
Presetable Synchronous, Asynchronous Clear				Presetable Up/Down				Up/Down, Synchronous			
C				4XXX				AC	MC74AC190	Motorola	120
					CD40192BM	† National			74AC11190	TI	
					CD4510BC	National	(Cont'd)	ACT	74ACT11190	TI	
HC	MM54C160	† Harris			CD4510BM	† National		HC	CD54HC190	*† Harris	
	MM74C160	National			HCC40192B	† SGS-Thomson			CD74HC190	* Harris	
					HCC4510B	† SGS-Thomson			HD74HC190	Hitachi	125
	CD54HC160	*† Harris	5		HCF40192B	SGS-Thomson			HD74HC668	Hitachi	
	CD74HC160	* Harris			HCF4510B	SGS-Thomson			MM54HC190	† National	
	HD74HC160	Hitachi			HEF40192B	Signetics			MM74HC190	National	
	MC54HC160	† Motorola			HEF4510B	Signetics			M74HC190	SGS-Thomson	
	MC74HC160	Motorola			TC40192B	Toshiba (3727)			M74HC696	SGS-Thomson	130
	MM54HC160	† National			TC4510B	Toshiba (3727)			M74HC698	SGS-Thomson	
	MM74C160	National							SN54HC190	† TI	
	M74HC160	SGS-Thomson	10						SN74HC190	TI	
	LR74HC160	Sharp							TC74HC190A	Toshiba	
	SN54HC160	† TI							US74HC190	Universal	135
	SN74HC160	TI									
	TC74HC160A	Toshiba									
	US74HC160	Universal									
HCS	HCS160MS	† Harris									
HCT	CD54HCT160	*† Harris									
	CD74HCT160	* Harris									
	KS74HCTLS160	Samsung									
4XXX	GD40160B	GoldStar									
	CD40160B	† Harris									
	CD40160BE	Harris									
	CD40160B	† Micrel									
	MC14160BC	Motorola									
	CD40160BC	National									
	CD40160BM	† National									
	HCC40160B	† SGS-Thomson									
	HCF40160B	† SGS-Thomson									
	HEF40160B	Signetics									
	TC40160B	Toshiba (3727)									
Presetable Synchronous BCD Decade Up/Down Counter				Synchronous Presetable BCD Decade Counter, Asynchronous Reset				Up/Down, Three-State			
AHCT	KS74AHCT190	Samsung			AC	74AC11160	Signetics	AC	74AC11568	TI	140
	KS74AHCT192	Samsung			ACT	74ACT11160	Signetics	ACT	74ACT11568	TI	
HC	74HC190	Mitsubishi									
HCT	54HCT190	† National									
	74HCT190	National									
HCTLS	KS74HCTLS190	Samsung									
	KS74HCTLS192	Samsung									
Presetable Up/Down				Synchronous Presetable BCD Decade Up/Down Counter w/Sync/Async Reset				Dual			
AC	74AC11192	TI			AC	74AC11568	Signetics	AHCT	NJU74HC390	† NJR	145
ACT	74ACT11192	TI			ACT	74ACT11568	Signetics	HC	KS74AHCT390	Samsung	
AHCT	54AHCT193	o† Ideal Semi (3532)							CD54HC390	† Harris	
									CD74HC390	Harris	
									HD74HC390	Hitachi	
									HD74HC490	Hitachi	
									MC54HC390	† Motorola	
									MM54HC390	† National	
									MM74HCA390	National	150
									MM74HC390	National	

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL-CMOS (Cont'd)

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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

^aBehavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Decoders (Cont'd)				4-Bit Latch/4-to-16-Line Decoder (high) 4XXX (Cont'd)				Delay Line, Programmable 8-Bit (0.50 ns steps) DS1020-050 ♦ Dallas (3439)				
3-Line to 8-Line Decoder/Demultiplexer with Input Latches HC	CD54HC137	† Harris	5	CD4514BC CD4514BM CD4515BC CD4515BM HCC4514B HCC4515B HCF4514B HCF4515B HEF4514B HEF4515B TC4514B TC4515B	National † National National † National † SGS-Thomson † SGS-Thomson SGS-Thomson SGS-Thomson Signetics Signetics Toshiba (3727) Toshiba (3727)	70	Delay Line, Programmable 8-Bit (2 ns steps) DS1020-200 ♦ Dallas (3439)				130	
	CD54HC237	† Harris					Delay Line (three independent 10 nanosecond delays) DS1013-10 ♦ Dallas (3439)					
	CD74HC137	Harris					Delay Line (three independent 100 nanosecond delays) DS1013-100 ♦ Dallas (3439)					
	CD74HC237	Harris					Delay Line (three independent 15 nanosecond delays) DS1013-15 ♦ Dallas (3439)					
	HD74HC137	Hitachi					Delay Line (three independent 20 nanosecond delays) DS1013-20 ♦ Dallas (3439)					
	HD74HC237	Hitachi					Delay Line (three independent 25 nanosecond delays) DS1013-25 ♦ Dallas (3439)					
	M74HC137	Mitsubishi					Delay Line (three independent 30 nanosecond delays) DS1013-30 ♦ Dallas (3439)					
	M74HC237	Mitsubishi					Delay Line (three independent 40 nanosecond delays) DS1013-40 ♦ Dallas (3439)					
	MC54HC137	† Motorola					Delay Line (three independent 50 nanosecond delays) DS1013-50 Dallas (3439)					
	MC54HC237	† Motorola					Delay Line (three independent 60 nanosecond delays) DS1013-60 ♦ Dallas (3439)					
	MC74HC137	Motorola					Delay Line (three independent 70 nanosecond delays) DS1013-70 ♦ Dallas (3439)					
	MC74HC237	Motorola					Delay Line (three independent 75 nanosecond delays) DS1013-75 Dallas (3439)					
	MM54HC137	† National					Delay Line (three independent 80 nanosecond delays) DS1013-80 ♦ Dallas (3439)					
	MM54HC237	† National					Delay Line (three independent 90 nanosecond delays) DS1013-90 ♦ Dallas (3439)					
	MM74HC137	National					Delay Line, Voltage Compensated (4-tap) DS1003 Dallas (3439)					
M74HC137	SGS-Thomson	Delay Line, 5 Taps DS1000 ♦ Dallas (3439)										
M74HC237	SGS-Thomson	Delay Line (5 taps: 100,200,300,400 and 500 ns) DS1005-500 ♦ Dallas (3439)										
LR74HC137	Sharp	Delay Line (5 taps: 10,20,30,40 and 50 ns) DS1005-50 ♦ Dallas (3439)										
74HC137	Signetics	Delay Line (5 taps: 12,24,36,48 and 60 ns) DS1005-60 ♦ Dallas (3439)										
SN54HCT137	† TI	Delay line, 8-Bit Programmable (0.25 ns steps) DS1020-25 Dallas (3439)										
SN74HCT137	TI	Delay Line, 8-Bit Programmable (0.5 ns steps) DS1020-50 Dallas (3439)										
TC74HC137A	Toshiba	Delay Line 2-in-1 (independent delays to outputs) DS1012-1 ♦ Dallas (3439)										
HCT	MV74HCT137	GEC Plessey	25	4-Line to 16-Line Decoder/Demultiplexer, Inverting HC HD74HC4515 SN74HC4515 TC74HC4515A	Hitachi TI Toshiba	80	DS1012-2 ♦ Dallas (3439)				140	
	MV74HCT237	GEC Plessey					DS1012-3 ♦ Dallas (3439)					
	54HCT137SOS	GEC Plessey					DS1012-4 ♦ Dallas (3439)					
	54HCT237SOS	GEC Plessey					DS1012-5 ♦ Dallas (3439)					
	74HCT137	GEC Plessey					Delay Line (5 taps: 100,200,300,400 and 500 ns) DS1000-500 ♦ Dallas (3439)					
	74HCT237	GEC Plessey					Delay Line (5 taps: 10,20,30,40 and 50 ns) DS1000-50 ♦ Dallas (3439)					
	CD54HCT137	† Harris					Delay Line (5 taps: 12,24,36,48 and 60 ns) DS1000-60 ♦ Dallas (3439)					
	CD54HCT237	† Harris					Delay Line (5 taps: 15,30,45,60 and 75 ns) DS1000-75 ♦ Dallas (3439)					
	CD74HCT137	Harris					Delay Line (5 taps: 20,40,60,80 and 100 ns) DS1000-100 ♦ Dallas (3439)					
	CD74HCT237	Harris					Delay Line (5 taps: 25,50,75,100 and 125 ns) DS1000-125 ♦ Dallas (3439)					
	74HCT137	Signetics					Delay Line, Programmable 8-Bit (0.25 ns steps) DS1020-025 ♦ Dallas (3439)					
	SN54HCT137	† TI										
	SN74HCT137	TI										
	TC74HCT137	Toshiba										
	SC	MV74SC137					GEC Plessey	30	8-Line to 3-Line Priority Encoder HC M74HC148 M74HC148 SN54HC148 TC74HC148A	† Harris Harris Signetics		105
MV74SC237		GEC Plessey										
3-to-8 Line Decoder/Demultiplexer				40	8-Line to 3-Line Priority Encoders HCTL5 54HCTL5148 74HCTL5148 KS74HCTL5148	Mitsubishi SGS-Thomson † TI Toshiba	110					150
NJU74HC138		♦ NJR										
NJU74HC238		♦ NJR										
3-to-8 Line Decoder/Demultiplexer with Input Latches, Inverting				45	8-Line to 3-Line Priority Encoders HCTL5 54HCTL5148 74HCTL5148 KS74HCTL5148	♦ Ideal Semi (3534) ♦ Ideal Semi (3534) Samsung	115					155
NJU74HC137		♦ NJR										
NJU74HC237		♦ NJR										
4-Bit Latch/4-to-16-Line Decoder (high) HC				50	8-Line to 8-Line Priority Encoder HC MM54HC149 MM74HC149	† National National	120					160
HCT	CD54HC4514	† Harris										
	CD54HC4515	† Harris										
	CD74HC4514	Harris										
	CD74HC4515	Harris										
	HD74HC4514	Hitachi										
	MC54HC4514	† Motorola										
	MC74HC4514	Motorola										
	MM54HC4514	† National										
	MM74HC4514	National										
	M74HC4514	SGS-Thomson										
	74HC4514	Signetics										
	74HC4515	Signetics										
4XXX	CD4514B	† Harris	65	10-Line to 4-Line Priority Encoder HC CD54HC147 CD74HC147 HD74HC147 MC54HC147 MC74HC147 M74HC147 74HC147	† Harris Harris Hitachi † Motorola Motorola SGS-Thomson Signetics	125					165	
	CD4514BE	Harris										
	CD4515B	† Harris										
	CD4515BE	Harris										
	CD4514B	† Micrel										
	CD4515B	† Micrel										
	MC14514BC	Motorola										
	MC14515BC	Motorola										

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Delay Lines (Cont'd)				LED, 4-Digit Multiplexed BCD or Binary to 7-Segment Decoder/Driver				Octal Buffer/Line Driver					
Delay Line (5 taps: 35,70,105,140 and 175 ns)	DS1000-175 ♦ Dallas (3439)			ICM7212	♦ Maxim			AC	SN54AC11240	*† TI			
	DS1005-175 ♦ Dallas (3439)			ICM7212A	♦ Maxim		55		SN54AC11241	*† TI			
Delay Line (5 taps: 40,80,120,160 and 200 ns)	DS1000-200 ♦ Dallas (3439)								SN54AC11244	*† TI			
	DS1005-200 ♦ Dallas (3439)			LED, 4-Digit BCD or Binary to 7-Segment Decoder/Driver, Data and Digit Select Input Latches for μP Interface				ACT	SN54ACT11240	*† TI	110		
Delay Line (5 taps: 50,100,150,200 and 250 ns)	DS1000-250 ♦ Dallas (3439)			ICM7212AM	Harris				SN54ACT11241	*† TI			
	DS1005-250 ♦ Dallas (3439)								SN54ACT11244	*† TI			
Delay Line (7-in-1, custom set at factory)	DS1007 ♦ Dallas (3439)			LED, 4-Digit, 17-Segment Alphanumeric Display with Memory, Decoder				4-Digit Display (stores segment and address data, drives 7-8 segment digits)					
Delay Line, Programmable 8-Bit (1 ns steps)	DS1020-100 ♦ Dallas (3439)			C	MM74C956	National		C	MM74C911	National			
Programmable Delay Line, 4-Bit Dual	DS1045 Dallas (3439)			BCD (hexadecimal) to 7-Segment Latch/Decoder/Driver				6-Digit BCD Display (stores segment and address data, drives 7-8 segment digits)					
Programmable Pulse Generator (for delay lines)	DS1040 Dallas (3439)			4XXX	MC14495	♦ Motorola		C	MM74C912	National			
Drivers				BCD-to-7-Segment Latch/Decoder/Driver				6-Digit Hex Display (stores segment and address data, drives 7-segment digits)					
Display Driver (50 V high voltage, LCD)	MIC8030 Micrel (3575)			HC	CD54HC4511	† Harris		C	MM74C917	National			
Display Driver (100 V high voltage LCD)	MIC8031 Micrel (3575)				CD74HC4511	Harris		7-Segment to BCD Converter/Driver					
LCD, Dot Matrix	HC0538A Hughes				HD74HC4511	Hitachi		C	MM74C915	National	115		
	HC0539A Hughes				MC54HC4511	† Motorola		10-Bit Buffer/Driver, Three-State, Non-Inverting					
	HC0540 Hughes				MM54HC4511	† National		AC	74AC11827	TI			
	HC0550 Hughes				MM74HC4511	National		Flip-Flops, D-Type					
	HC0551 Hughes				M74HC4511	SGS-Thomson		Dual					
	HC0607 Hughes				LR74HC4511	Sharp		AC	CD54AC74	*† Harris			
LCD, BCD-to-7-Segment Decoder/Driver with "Display Frequency Output"					74HC4511	Signetics			CD74AC74	♦ Harris			
4XXX	CD4055B	† Harris		HCT	CD54HCT4511	† Harris			MC74AC74	♦ Motorola	120		
	CD4055BE	Harris			CD74HCT4511	Harris			54AC74	*† National			
	CD4056B	† Harris			74HCT4511	Signetics			74AC74	♦ National			
	CD4056BE	Harris		4XXX	GD4511B	† GoldStar			SN54AC11074	*† TI			
	HCC4055B	† SGS-Thomson			CD4511B	† Harris			74AC11074	♦ TI			
	HCC4056B	† SGS-Thomson			CD4511BE	Harris			TC74AC74	♦ Toshiba			
	HCF4055B	♦ SGS-Thomson			MC14511BC	♦ Motorola		ACT	CD54ACT74	*† Harris	125		
	HCF4056B	♦ SGS-Thomson			MC14513BC	♦ Motorola			CD74ACT74	* Harris			
	TC4055B Toshiba (3727)				CD4511BC	National			MC74ACT74	♦ Motorola			
	TC4056B Toshiba (3727)				CD4511BM	† National			54ACT74	† National	130		
LCD, BCD-to-7-Segment Latch/Decoder/Driver					MN4511B	♦† Panasonic			74ACT74	National			
HC	CD54HC4543	† Harris			HCC4511B	† SGS-Thomson			SN54ACT11074	*† TI			
	CD74HC4543	Harris			HCF4511B	♦ SGS-Thomson			74ACT11074	♦ TI			
	HD74HC4543	Hitachi			HEF4511B	Signetics		AHCT	54AHCT74 ♦‡ Ideal Semi (3532)				
	M74HC4543	SGS-Thomson			TC4511B Toshiba (3727)				74AHCT74 ♦‡ Ideal Semi (3532)				
	LR74HC4543	Sharp			5XXX	TC5022B Toshiba (3727)			KS74AHCT74	Samsung			
	74HC4543	Signetics				TC5068B	Toshiba		C	MM54C74	† National	135	
	TC74HC4543A	Toshiba				TC5069B Toshiba (3727)			MM74C74	National			
HCT	CD54HCT4543	† Harris			BCD-to-7-Segment Latch/Decoder/LCD Driver				HC	GD74HC74	GoldStar	140	
	CD74HCT4543	Harris			HC	MM54HC4543	† National			CD54HC74	*† Harris		
	M74HC4543A	Toshiba				MM74HC4543	National			CD74HC74	♦ Harris		
4XXX	MC14543BC	♦ Motorola			Dual High Voltage, Source 250 mA					HD74HC74	Hitachi		
	CD4543BC	National			C	MM74C908	National			M74HC74	Mitsubishi		
	CD4543BM	† National				MM74C918	National			MC54HC74A	† Motorola		
	HEF4543B	Signetics			Dual 1-Line to 4-Line Clock Driver, Three-State					MC74HC74A	Motorola		
	TC4543B Toshiba (3727)				AC	74AC11208	Signetics			MM54HC74	† National	145	
LCD, 4-Digit, Multiplexed BCD to LCD Decoder/Driver, AC Drive	ICM7211	Harris			ACT	74ACT11208	Signetics			MM74HC74	National		
	ICM7211A	Harris				74ACT11208	♦ TI			M74HC74	SGS-Thomson		
	ICM7211AM	Harris								LR74HC74	Sharp		
	ICM7211M	Harris								74HC74	♦ Signetics		
LCD, 4-Digit Serial Input	HC0438A	Hughes								SN54HC74	† TI		
LCD, 4-Line										SN74HC74	TI	150	
4XXX	CD4054B	† Harris			Hex	HC	SN54HC367	♦† TI		HCT	CD54HCT74	*† Harris	
	CD4054BE	Harris									CD74HCT74	♦ Harris	
	HCC4054B	† SGS-Thomson									54HCTLS74A ♦‡ Ideal Semi (3533)		
	HCF4054B	♦ SGS-Thomson									74HCTLS74A ♦‡ Ideal Semi (3533)		
	TC4054B	Toshiba									MM54HCT74	† National	155
											MM74HCT74	National	
											KS74HCTLS74	Samsung	
											M74HCT74	SGS-Thomson	
											74HCT74	♦ Signetics	160
											SN74HCT74	TI	
											TC74HCT74A	Toshiba	
												(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Flip-Flops, D-Type (Cont'd)				Quad HC (Cont'd)				Hex AC (Cont'd)			
Dual	4XXX	GD4013B ‡ GoldStar CD4013B ‡ Harris CD4013BE Harris CD4013A ‡ Micrel CD4013B ‡ Micrel MC14013BA † Motorola MC14013BC Motorola CD4013BC National CD4013BM † National HCC4013B † SGS-Thomson HCF4013B ◊ SGS-Thomson HEF4013B Signetics TC4013B Toshiba (3727)	(Cont'd)	5	HCT	CD54HCT175 * † Harris CD74HCT175 * Harris 54HCTLS175 ◊ ‡ Ideal Semi (3534) 74HCTLS175 ◊ ‡ Ideal Semi (3534) KS74HCTLS175 Samsung 74HCT175 * Signetics	65	ACT	CD54ACT174 * † Harris CD74ACT174 * Harris MC74ACT174 ◊ Motorola 54ACT174 † National 74ACT174 † National 74ACT11174 Signetics 74ACT11174 TI TC74ACT174 ◊ Toshiba	130	
Dual D-F/F w/Preset and Clear	ACT	TC74ACT174 ◊ Toshiba		4XXX	CD40175B † Harris CD40175BE Harris MC14175BC Motorola CD40175B National HEF40175B Signetics TC40175B Toshiba (3727)		70	AHCT	54AHCT174 ◊ ‡ Ideal Semi (3532) 74AHCT174 ◊ ‡ Ideal Semi (3532) KS74AHCT174 Samsung	135	
Dual D-Type	4XXX	NUJ4013B NJR BU4013B ROHM	15	Quad D-Type with Enable NJU74HC379 ◊ NJR			75	C	MM54C174 ‡ Micrel MM54C174 † National MM74C174 National	140	
Dual D-Type with Set and Reset (LSTTL compatible inputs)	HCT	MC74HCT74A Motorola		Quad with Enable AC 74AC11379 Signetics 74AC11379 TI ACT 74ACT11379 Signetics 74ACT11379 TI HC SN54HC379 † TI SN74HC379 TI			80	HC	CD54HC174 * † Harris CD74HC174 * Harris HD74HC174 † Hitachi MC54HC174A † Motorola MC74HC174A Motorola MM54HC174 † National MM74HC174 National M74HC174 † SGS-Thomson LR74HC174 Sharp 74HC174 † Signetics SN54HC174 † TI SN74HC174 TI SN74174 TI TC74HC174A Toshiba US74HC174 † Universal	145	
Dual, Positive-Edge Triggered with Preset and Clear	HCTLS	KS74HCTLS74A Samsung		Quad with Reset, Positive-Edge Triggered AC 74AC11175 Signetics ACT 74ACT11175 Signetics			85	HCT	GD74HCT174 † GoldStar CD54HCT174 * † Harris CD74HCT174 * Harris 54HCTLS174 ◊ ‡ Ideal Semi (3534) 74HCTLS174 ◊ ‡ Ideal Semi (3534) MC54HCT174A ◊ † Motorola MC74HCT174A ◊ Motorola KS74HCTLS174 Samsung 74HCT174 * Signetics TC74HCT174A Toshiba	150	
Dual with Preset and Clear		NJU74HC74 ◊ NJR	20	Quad Three-State AHCT 54AHCT173 ◊ ‡ Ideal Semi (3532) 74AHCT173 ◊ ‡ Ideal Semi (3532) KS74AHCT173 Samsung			90	4XXX	CD40174B † Harris CD40174BE Harris CD40174B ‡ Micrel MC14174BC Motorola CD40174BC National CD40174BM † National HCC40174B † SGS-Thomson HCF40174B ◊ SGS-Thomson HEF40174B Signetics TC40174B Toshiba	155	
Dual with Set/Reset	4XXX	CD4013A † Harris		C	MM54C173 ‡ Micrel MM54C173 † National MM74C173 National		95	Hex D-Type with Enable	NJU74HC378 ◊ NJR		160
Dual with Set/Reset, Positive-Edge Triggered	AC	74AC11074 Signetics		Cell	SN74173-Cell TI		100	Hex with Clear	NJU74HC174 ◊ NJR		165
ACT	74ACT11074 Signetics			HC	CD54HC173 † Harris CD74HC173 Harris HD74HC173 Hitachi MC54HC173 † Motorola MC74HC173 Motorola MM54HC173 † National MM74HC173 National M74HC173 SGS-Thomson LR74HC173 Sharp 74HC173 Signetics SN54HC173 † TI SN74HC173 TI TC74HC173A Toshiba US74HC173 Universal		105	Hex with Enable	AC 74ACT11378 Signetics 74AC11378 Signetics 74AC11378 TI ACT 74ACT11378 TI HC SN54HC378 * † TI SN74HC378 * TI	170	
Dual 4-Bit	ACT	74ACT11874 TI V54ACT874 † VTC V54ACT876 † VTC V54ACT878 † VTC V54ACT879 † VTC V74ACT874 VTC V74ACT876 VTC V74ACT878 VTC V74ACT879 VTC	25	HCT	CD54HCT173 † Harris CD74HCT173 Harris 74HCT173 Signetics		110	Octal	NJU74HC273 ◊ NJR NJU74HC374 ◊ NJR NJU74HC377 ◊ NJR		175
Dual 4-Bit Edge-Triggered, Non-Inverting	AC	74AC11874 TI	30	4XXX	CD4076B † Harris CD4076BE Harris CD4076B ‡ Micrel MC14076BC Motorola CD4076BC National CD4076BM † National HCC4076B † SGS-Thomson HCF4076B ◊ SGS-Thomson HCF4076B Signetics TC4076B Toshiba (3727)		115	AC	MC74AC273 ◊ Motorola MC74AC374 ◊ Motorola		180
Quad		NJU74HC175 ◊ NJR SN74175 TI	35	HC	CD54HC175 * † Harris CD74HC175 * † Harris HD74HC175 Hitachi MC54HC175 † Motorola MC74HC175 Motorola MM54HC175 † National MM74HC175 National M74HC175 SGS-Thomson		120				185
AC	CD54AC175 * † Harris CD74AC175 * † Harris 54AC175 † National 74AC175 National 74AC11175 TI TC74AC175 Toshiba		40	Hex	AC CD54AC174 * † Harris CD74AC174 * † Harris MC74AC174 ◊ Motorola		125				190
ACT	CD54ACT175 * † Harris CD74ACT175 * † Harris 54ACT175 † National 74ACT175 National 74ACT11175 TI TC74ACT175 ◊ Toshiba		45								
AHCT	54AHCT175 ◊ ‡ Ideal Semi (3532) 74AHCT175 ◊ ‡ Ideal Semi (3532) KS74AHCT175 Samsung		50								
C	MM54C175 ‡ Micrel MM54C175 † National MM74C175 National		55								
HC	CD54HC175 * † Harris CD74HC175 * † Harris HD74HC175 Hitachi MC54HC175 † Motorola MC74HC175 Motorola MM54HC175 † National MM74HC175 National M74HC175 SGS-Thomson		60								
		(Continued)									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Flip-Flops, D-Type (Cont'd)				Octal Three-State, Inverting FCT (Cont'd)				Octal Three-State, Non-Inverting AC (Cont'd)			
Octal with Reset and Enable, Positive Edge-Triggered, Three-State				IDT74FCT534AT				54AC825			
AC				IDT74FCT534CT				74AC374			
74AC11825				IDT74FCT534T				74AC574			
74AC11826				V54FCT534				74AC825			
ACT				V54FCT826A				74AC11374			
74ACT11825				V74FCT534				74AC11825			
74ACT11826				V74FCT826A				TC74AC374			
Octal, Three-State				HC				TC74AC574			
54FCT534				CD54HC534				ACT			
74FCT534				CD54HC564				CD74ACT574			
NJU74HC534				CD74HC534				54ACT374			
ACQ				CD74HC564				54ACT574			
54ACQ374				HD74HC534				54ACT825			
54ACQ534				HD74HC564				74ACT374			
54ACQ564				MC54HC534A				74ACT574			
74ACQ374				MC54HC564				74ACT825			
74ACQ534				MC74HC534A				74ACT11374			
74ACQ564				MC74HC564				74ACT11825			
74ACQ574				MM54HC534				V54ACT374			
ACT				MM54HC564				V54ACT574			
ACTQ				MM74HC534				V54ACT825			
54ACTQ374				MM74HC564				V74ACT374			
54ACTQ534				M74HC534				V74ACT574			
54ACTQ564				M74HC564				V74ACT825			
54ACTQ574				LR74HC534				AHCT			
74ACTQ374				LR74HC564				54AHCT374			
74ACTQ534				74HC534				54AHCT574			
74ACTQ564				74HC564				74AHCT374			
74ACTQ574				SN54HC534				74AHCT574			
Octal Three-State, Inverting				SN54HC564				KS74AHCT374			
AC				SN54HC564				KS74AHCT574			
CD54AC534				SN74HC534				BCT			
CD54AC564				SN74HC564				SN54BCT374			
CD74AC534				TC74HC534A				SN74BCT374			
CD74AC564				TC74HC564A				C			
74AC11534				HCT				MM54C374			
74AC11826				MV74HCT534				MM54C374			
TC74AC534				MV74HCT564				MM74C374			
TC74AC564				54HCT534SOS				FCT			
ACT				54HCT564SOS				DPLFCT574Y			
CD54ACT534				74HCT534				IDT54FCT374			
CD54ACT564				74HCT564				IDT54FCT374A			
CD74ACT534				CD54HCT534				IDT54FCT374AT			
CD74ACT564				CD54HCT564				IDT54FCT374C			
54ACT534				CD74HCT534				IDT54FCT374CT			
54ACT564				CD74HCT564				IDT54FCT374T			
74ACT534				HD74HCT534				IDT54FCT574			
74ACT564				54HCTLS534				IDT54FCT574AT			
74ACT11534				54HCTLS564				IDT54FCT574C			
74ACT11826				74HCTLS534				IDT54FCT574CT			
V54ACT534				74HCTLS564				IDT54FCT574T			
V54ACT564				MM54HCT534				IDT54FCT574AT			
V54ACT576				MM74HCT534				IDT54FCT574C			
V54ACT826				MM74HCT564				IDT54FCT574CT			
V74ACT534				KS74HCTLS534				IDT54FCT574T			
V74ACT564				KS74HCTLS564				IDT54FCT825A			
V74ACT576				M74HCT534				IDT54FCT825B			
V74ACT826				74HCT534				IDT74FCT374			
AHCT				74HCT564				IDT74FCT374A			
54AHCT534				SN74HCT534				IDT74FCT374AT			
54AHCT564				SN74HCT564				IDT74FCT374C			
74AHCT534				TC74HCT564A				IDT74FCT374CT			
74AHCT564				PCT				IDT74FCT374T			
KS74AHCT534				P54PCT534				IDT74FCT374AT			
KS74AHCT564				P74PCT534				IDT74FCT374C			
FCT				Octal Three-State, Inverting with Clear				IDT74FCT374CT			
IDT54FCT534				ACT				IDT74FCT374T			
IDT54FCT534A				V54ACT577				IDT74FCT374AT			
IDT54FCT534AT				V74ACT577				IDT74FCT374C			
IDT54FCT534CT				Octal Three-State, Non-Inverting				IDT74FCT374T			
IDT54FCT534T				AC				IDT74FCT374AT			
IDT74FCT534				CD54AC374				IDT74FCT374C			
IDT74FCT534A				CD54AC574				IDT74FCT574			
(Continued)				CD74AC374				IDT74FCT574A			
				CD74AC574				IDT74FCT574AT			
				54AC374				IDT74FCT574C			
				54AC574				IDT74FCT574T			
				(Continued)				(Continued)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Flip-Flops, J-K Type (Cont'd)				Dual Negative Edge-Triggered with Clear (Cont'd)				Dual Negative Edge-Triggered with Preset and Clear (Cont'd)			
Dual	4XXX	(Cont'd)		HC	MM74HC107	National	60	HCT	KS74HCTLS76	Samsung	125
	CD4027BE	Harris			MM74HC73	National			74HCT112	* Signetics	
	CD4027A	‡ Micrel			M74HC107	SGS-Thomson		Dual Negative Edge-Triggered with Preset, Common Clock and Common Clear			
	CD4027B	‡ Micrel			LR74HC107	Sharp		HC	HD74HC114	Hitachi	
	MC14027BC	Motorola	5		74HC107	Signetics	65		M74HC114	* Mitsubishi	
	CD4027BC	National			74HC73	Signetics			SN54HC114	* TI	
	CD4027BM	† National			SN54HC107	† TI			SN74HC114	* TI	
	HCC4027B	† SGS-Thomson			SN74HC107	TI		Dual, Negative-Edge Triggered with Clear			
	HCF4027B	◊ SGS-Thomson			SN74HC73	TI		HCTLS	KS74HCTLS107A	Samsung	130
	HEF4027B	Signetics			TC74HC107A	Toshiba			KS74HCTLS73A	Samsung	
	TC4027B	Toshiba (3727)	10		TC74HC73A	Toshiba	70	Dual, Negative-Edge Triggered with Preset and Clear			
Dual J-K				HCT	CD54HCT107	† Harris		AHCT	KS74AHCT76	Samsung	
AC	SN54AC11109	* † TI			CD54HCT73	† Harris			KS74AHCT78	Samsung	
	TC74AC109	◊ Toshiba			CD74HCT107	Harris		HCTLS	54HCTLS76A	◊ † Ideal Semi	(3533)
ACT	SN54ACT11109	* † TI			CD74HCT73	Harris			54HCTLS78A	◊ † Ideal Semi	(3533)
Dual J-K F/F w/ Preset and Clear					54HCTLS107A	◊ † Ideal Semi	75		74HCTLS76A	◊ † Ideal Semi	(3533)
ACT	TC74ACT109	◊ Toshiba	15		54HCTLS73A	◊ † Ideal Semi			74HCTLS78A	◊ † Ideal Semi	(3533)
	TC74ACT112	◊ Toshiba			74HCTLS107A	◊ † Ideal Semi			KS74HCTLS112A	Samsung	140
Dual J-K with Preset and Clear					74HCTLS73A	◊ † Ideal Semi			KS74HCTLS76A	Samsung	
HCT	MM54HCT76	† National			74HCTLS78A	◊ † Ideal Semi			KS74HCTLS78A	Samsung	
Dual J-K with Set/Reset, Negative-Edge Triggered					KS74HCTLS107	Samsung	80	Dual Positive Edge-Triggered with Preset and Clear			
AC	74AC11112	Signetics		AC	CD54AC112	* † Harris		AHCT	74AHCT109	◊ † Ideal Semi	(3532)
ACT	74ACT11112	Signetics			CD54AC112	* Harris			74AHCT109	◊ † Ideal Semi	(3532)
Dual J-K with Set/Reset, Positive-Edge Triggered					74AC11112	TI		HC	CD54HC109	* † Harris	
AC	74AC11109	Signetics	20		74HCT73	Signetics			CD74HC109	* Harris	
ACT	74ACT11109	Signetics							HD74HC109	Hitachi	
Dual Negative Edge-Triggered									MC54HC109	† Motorola	
AC	54AC112	† National							MC74HC109	Motorola	
	74AC112	National							MM54HC109	† National	
ACT	54ACT112	† National							MM74HC109	National	
	74ACT112	National							M74HC109	SGS-Thomson	
Dual Negative Edge-Triggered, Separate Preset and Clock									LR74HC109	Sharp	
HC	HD74HC113	Hitachi	25	ACT	CD54ACT112	* † Harris			74HC109	* Signetics	
	M74HC113	Mitsubishi			CD74ACT112	* Harris			SN54HC109	† TI	
	MC54HC113	† Motorola			74ACT11112	* TI			SN74HC109	TI	
	MC74HC113	Motorola							TC74HC109A	Toshiba	
	MM54HC113	† National									
	MM74HC113	National	30								
	M74HC113	SGS-Thomson									
	LR74HC113	Sharp									
	SN54HC113	* † TI									
	SN74HC113	* TI									
	TC74HC113A	Toshiba	35								
Dual Negative Edge-Triggered with Clear											
AHCT	54AHCT107	◊ † Ideal Semi	(3532)								
	54AHCT73	◊ † Ideal Semi	(3532)								
	74AHCT107	◊ † Ideal Semi	(3532)								
	74AHCT73	◊ † Ideal Semi	(3532)								
	KS74AHCT107	Samsung									
	KS74AHCT73	Samsung	40								
C	MM54C107	† National									
	MM54C73	† National									
	MM74C107	National									
	MM74C73	National	45								
HC	CD54HC107	† Harris									
	CD54HC73	† Harris									
	CD74HC107	Harris									
	CD74HC73	Harris									
	HD74HC107	Hitachi	50								
	HD74HC73	Hitachi									
	M74HC73	Mitsubishi									
	MC54HC107	† Motorola									
	MC54HC73	† Motorola									
	MC74HC107	Motorola	55								
	MC74HC73	Motorola									
	MM54HC107	† National									
	MM54HC73	† National									
		(Continued)									
Dual Negative Edge-Triggered with Preset and Clear				Dual Negative Edge-Triggered with Preset and Clear				Dual, Positive-Edge Triggered			
								AC	MC74AC109	◊ Motorola	
								Dual, Positive-Edge Triggered with Preset and Clear			
								HCTLS	KS74HCTLS109A	Samsung	
								Dual with Preset			
									NJU74HC113	◊ NJR	165
								Dual with Preset and Clear			
									NJU74HC109	◊ NJR	
									NJU74HC112	◊ NJR	
									NJU74HC114	◊ NJR	
								Gates, AND			
								Single 2-Input	BU4S81	ROHM	
								Dual 4-Input	NJU74HC21	◊ NJR	170
								AC	74AC11021	◊ Signetics	
									SN54AC11021	* † TI	
									74AC11021	* TI	
								ACT	74ACT11021	Signetics	
									SN54ACT11021	* † TI	175
									74ACT11021	* TI	
								AHCT	KS74AHCT21	Samsung	
								HC	CD54HC21	* † Harris	
										(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Gates, AND (Cont'd)				Triple 4-Input AND/NAND				Quad 2-Input, Open Collector				
Dual 4-Input HC	CD74HC21	° Harris	5	AC	74AC11800	Signetics	70	AHCT	54AHCT09	◊‡ Ideal Semi (3532)	135	
	HD74HC21	Hitachi		ACT	74ACT11800	Signetics			74AHCT09	◊‡ Ideal Semi (3532)		
	M74HC21	SGS-Thomson		Quad 2-Input	NJU74HC08	° NJR		75	HC	KS74AHCT09		Samsung
	74HC21	Signetics			AC	CD54AC08			*† Harris	HD74HC09		Hitachi
	SN54HC21	† TI			CD74AC08	* Harris		SN54HC09	*† TI			
	SN74HC21	TI			MC74AC08	° Motorola		SN74HC09	°° TI			
	TC74HC21A	Toshiba			54AC08	† National		TC74HC09A	Toshiba			
	US74HC21	Universal			74AC08	National						
					74AC11008	Signetics						
					SN54AC11008	*† TI						
HCT	CD54HCT21	*† Harris	10		74AC11008	* TI		HCT	54HCTLS09	◊‡ Ideal Semi (3533)	140	
CD74HCT21	* Harris			TC74AC08	Toshiba		74HCTLS09	◊‡ Ideal Semi (3533)				
74HCT21	Signetics	ACT		CD54ACT08	*† Harris		KS74HCTLS09	Samsung				
				CD74ACT08	* Harris	80	Quad 2-Input (open drain)	NJU74HC09	° NJR			
HCTLS	KS74HCTLS21	Samsung		MC74ACT08	° Motorola			Quad 2-Input with Schmitt Trigger Inputs	NJU74HC7001	° NJR		
4XXX	CD4082B	‡ Harris		54ACT08	† National							
	CD4082BE	Harris		74ACT11008	Signetics		85	Quad 2-Input	TC74ACT08	° Toshiba		
	CD4082B	‡ Micrel		SN54ACT11008	*† TI				ACT			
	MC14082BC	Motorola		74ACT11008	* TI							
	CD4082BC	National										
	CD4082BM	† National	ACTQ	54ACTQ08	◊† National							
	HCC4082B	† SGS-Thomson		74ACTQ08	° National							
	HCF4082B	° SGS-Thomson	AHCT	54AHCT08	◊‡ Ideal Semi (3532)							
	HEF4082B	Signetics		74AHCT08	◊‡ Ideal Semi (3532)							
	TC4082B	Toshiba (3727)		KS74AHCT08	Samsung							
Triple 3-Input AC	NJU74HC11	° NJR	25	C	MM54C08	† National		90	Dual 2-Input (Driver)	CD40107B	† Harris	150
	MC74AC11	° Motorola			MM74C08	National	4XXX		CD40107BE	Harris		
	54AC11	† National							HCC40107B	† SGS-Thomson		
	74AC11	National							HCF40107B	SGS-Thomson		
	74AC11011	Signetics							TC40107B	Toshiba (3727)		
	74AC11011	* TI										
	TC74AC11	Toshiba										
ACT	MC74ACT11	° Motorola	30	HC	CD54HC08	*† Harris	95	Dual 4-Input	NJU74HC20	° NJR	155	
74ACT11011	Signetics			CD74HC08	Harris	AC		CD54AC20	*† Harris			
74ACT11011	* TI			HD74HC08	Hitachi			CD74AC20	* Harris			
				M74HC09	Mitsubishi			54AC20	† National			
				MC54HC08A	† Motorola			74AC20	National			
				MC74HC08A	Motorola			74AC11013	Signetics			
				MM54HC08	† National			74AC11020	Signetics			
				MM74HC08	National			74AC11020	* TI			
				M74HC08	SGS-Thomson			TC74AC20	Toshiba			
				LR74HC08	Sharp							
AHCT	54AHCT11	◊‡ Ideal Semi (3532)	40		74HC08	* Signetics	100	ACT	CD54ACT20	*† Harris	160	
74AHCT11	◊‡ Ideal Semi (3532)				74HC08	* Signetics			CD74ACT20	* Harris		
KS74AHCT11	Samsung				SN54HC08	† TI			74ACT11013	Signetics		
					SN74HC08	TI			74ACT11020	Signetics		
					SN74HC7001	TI			74ACT11020	* TI		
					TC74HC08A	Toshiba						
HC	CD54HC11	*† Harris	45	HCT	GD74HCT08	GoldStar	105	AHCT	KS74AHCT20	Samsung	165	
CD74HC11	* Harris			CD54HCT08	*† Harris			KS74AHCT22	Samsung			
HD74HC11	Hitachi			CD74HCT08	* Harris							
MC54HC11	† Motorola			54HCTLS08	◊‡ Ideal Semi (3533)							
MC74HC11	Motorola			74HCTLS08	◊‡ Ideal Semi (3533)							
MM54HC11	† National											
MM74HC11	National											
M74HC11	SGS-Thomson											
LR74HC11	Sharp											
74HC11	* Signetics											
SN54HC11	† TI		50		MM54HCT08	† National	110	C	MM54C20	† National	170	
SN74HC11	TI			MM74HCT08	National			MM74C20	National			
TC74HC11A	Toshiba			KS74HCTLS08	Samsung							
				74HCT08	* Signetics							
				SN74HCT08	TI							
				TC74HCT08A	Toshiba							
HCT	CD54HCT11	*† Harris	55	4XXX	GD4081B	GoldStar	115	HC	CD54HC20	*† Harris	175	
CD74HCT11	* Harris			CD4081B	‡ Harris			CD74HC20	* Harris			
54HCTLS11	◊‡ Ideal Semi (3533)			CD4081BE	Harris			HD74HC01	Hitachi			
74HCTLS11	◊‡ Ideal Semi (3533)			CD4081B	‡ Micrel			HD74HC20	Hitachi			
				MC14081BC	Motorola			M74HC20	Mitsubishi			
				CD4081BC	National			MC54HC20	† Motorola			
				CD4081BM	† National			MC74HC20	Motorola			
				BU4081B	ROHM			M74HC20	SGS-Thomson			
				HCC4081B	† SGS-Thomson			LR74HC20	Sharp			
				HCF4081B	° SGS-Thomson			74HC20	* Signetics			
			HEF4081B	Signetics		SN54HC20	† TI					
						SN74HC20	TI					
						TC74HC20A	Toshiba					
						US74HC20	Universal					
4XXX	CD4073B	‡ Harris	60				120	HCT	CD54HCT20	*† Harris	185	
CD4073BE	Harris							CD74HCT20	* Harris			
CD4073B	‡ Micrel							74HCT20	* Signetics			
MC14073BC	Motorola											
CD4073BC	National											
CD4073BM	† National											
HCC4073B	† SGS-Thomson											
HCF4073B	SGS-Thomson											
HEF4073B	Signetics											
TC4073B	Toshiba (3727)											
Triple 3-Input Positive	AC	SN54AC11011	*† TI	65	Quad 2-Input (LSTTL compatible inputs)		130	HCTLS	KS74HCTLS20	Samsung	190	
	ACT	SN54ACT11011	*† TI		HCT	MC54HCT08A		◊† Motorola	4XXX	CD4012B		‡ Harris
						MC74HCT08A		° Motorola		CD4012BE		Harris
								CD4012UB	† Harris			
								CD4012A	‡ Micrel			
								CD4012B	‡ Micrel			
								MC14012BC	Motorola			
											(Continued)	

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Gates, NAND (Cont'd)				Quad Select 4XXX (Cont'd)				Dual 4-Input 4XXX (Cont'd)			
Quad 2-Input (with open-drain outputs)				CD4019B	‡ Micrel		60	MC14072BC	Motorola		
HC	MC54HC03A	◊† Motorola		CD4019BC	National			CD4072BC	National		
	MC74HC03A	◊ Motorola		CD4019BM	† National			CD4072BM	† National		
Quad 2-Input with Schmitt Trigger Inputs				HCC4019B	† SGS-Thomson			HCC4072B	† SGS-Thomson		120
AHCT	KS74AHCT132	Samsung		HCF4019B	◊ SGS-Thomson			HCF4072B	◊ SGS-Thomson		
8-Input				HEF4019B	Signetics			HEF4072B	Signetics		
AC	74AC11030	Signetics	5	TC4019B	Toshiba (3727)	65		TC4072B	Toshiba (3727)		
	74AC11030	• TI		Quad 2-Input	NJU4019B	NJR		Triple 3-Input			
ACT	74ACT11030	Signetics		2-Wide, 2-Input/2-Wide, 3-Input				HC	CD54HC4075	† Harris	
	74ACT11030	• TI		NJU74HC58	◊ NJR				CD74HC4075	Harris	
AHCT	KS74AHCT30	Samsung	10	HC	MC54HC58	† Motorola	70		M74HC4075	Mitsubishi	125
C	MM54C30	† National			MC74HC58	Motorola			MC54HC4075	† Motorola	
	MM74C30	National			MM54HC58	† National			MC74HC4075	Motorola	
HC	CD54HC30	◊† Harris			MM74HC58	National			MM54HC266	† National	
	CD74HC30	• Harris			LR74HC58	Sharp			MM54HC4075	† National	130
	HD74HC30	Hitachi		Gates, AND-OR-Invert					MM74HC266	National	
	M74HC30	Mitsubishi		Dual					MM74HC4075	National	
	MC54HC30	† Motorola	15	HCTLS	54HCTLS51	◊‡ Ideal Semi			M74HC4075	SGS-Thomson	
	MC74HC30	Motorola			74HCTLS51	◊‡ Ideal Semi	(3533)		LR74HC4075	Sharp	
	MM54HC30	† National					(3533)		74HC4075	Signetics	
	MM74HC30	National			KS74HCTLS51	Samsung	75		SN54HC4075	† TI	135
	M74HC30	SGS-Thomson		Dual 2-Wide 2-Input				HCT	SN74HC4075	TI	
	LR74HC30	Sharp	20	4XXX	CD4085B	‡ Harris			TC74HC4075A	Toshiba	
	74HC30	• Signetics			CD4085BE	Harris			CD54HCT4075	† Harris	
	SN54HC30	† TI			HCC4085B	† SGS-Thomson			CD74HCT4075	Harris	140
	SN74HC30	TI			HCF4085B	◊ SGS-Thomson			74HCT4075	Signetics	
	TC74HC30A	Toshiba			HEF4085B	Signetics		4XXX	CD4075B	‡ Harris	
HCT	CD54HCT30	◊† Harris	25		TC4085B	Toshiba (3727)	80		CD4075BE	Harris	
	CD74HCT30	• Harris		Dual 2-Wide 2-Input, 2-Wide 3-Input					CD4075B	‡ Micrel	
	74HCT30	• Signetics		AC	74AC11051	Signetics			MC14075BC	Motorola	145
HCTLS	KS74HCTLS30	Samsung		ACT	74ACT11051	Signetics			CD4075BC	National	
4XXX	CD4068B	† Harris	30						CD4075BM	† National	
	CD4068BE	Harris		2-Wide, 2-Input/2-wide, 3-Input					HCC4075B	† SGS-Thomson	
	MC14068BC	Motorola		NJU74HC51	◊ NJR				HCF4075B	◊ SGS-Thomson	
	HCC4068B	† SGS-Thomson		AC	74AC11051	TI			HEF4075B	Signetics	
	HCF4068B	◊ SGS-Thomson		ACT	74ACT11051	TI			TC4075B	Toshiba (3727)	150
	HEF4068B	Signetics		AHCT	54AHCT51	◊‡ Ideal Semi	(3532)	Triple 4-Input OR/NOR			
	TC4068B	Toshiba (3727)	35		74AHCT51	◊‡ Ideal Semi	(3532)	AC	74AC11802	Signetics	
8-Input Positive								ACT	74ACT11802	Signetics	
AC	SN54AC11030	◊† TI			KS74AHCT51	Samsung		Quad 2-Input			
ACT	SN54ACT11030	◊† TI		HC	HD74HC51	Hitachi		AC	NJU74HC32	◊ NJR	
13-Input					M74HC51	Mitsubishi			CD54AC32	◊† Harris	
AHCT	KS74AHCT133	Samsung	40		MC54HC51	† Motorola			CD74AC32	• Harris	
HC	HD74HC133	Hitachi			MC74HC51	Motorola			MC74AC32	◊ Motorola	
	MC54HC133	† Motorola			MM54HC51	† National			54AC32	† National	
	MC74HC133	Motorola			MM74HC51	National			74AC32	National	
	MM54HC133	† National			M74HC51	SGS-Thomson			74AC11032	Signetics	
	MM74HC133	National			LR74HC51	Sharp				◊† TI	160
	M74HC133	SGS-Thomson			SN54HC51	† TI			74AC11032	• TI	
	LR75HC133	Sharp	45		SN74HC51	TI			TC74AC32	Toshiba	
	SN54HC133	† TI			TC74HC51A	Toshiba	100	ACT	CD54ACT32	◊† Harris	
	SN74HC133	TI		2-2-3-4 Input					CD74ACT32	• Harris	
	TC74HC133A	Toshiba		AC	74AC11064	Signetics			MC74ACT32	◊ Motorola	165
HCTLS	KS74HCTLS133	Samsung		ACT	74ACT11064	Signetics			54ACT32	† National	
Gates, AND-OR									74ACT32	National	
Dual									74ACT11032	Signetics	
HCTLS	54HCTLS58	◊‡ Ideal Semi		4-Wide 2-Input Expandable					SN54ACT11032	◊† TI	
	74HCTLS58	◊‡ Ideal Semi	(3533)	4XXX	CD4086B	‡ Harris			74ACT11032	• TI	170
	74HCTLS58	◊‡ Ideal Semi	(3533)		CD4086BE	Harris		ACTQ	54ACTQ32	◊† National	
	KS74HCTLS58	Samsung	50		HCC4086B	† SGS-Thomson			74ACTQ32	◊ National	
Dual AND-OR					HCF4086B	SGS-Thomson		AHCT	54AHCT32	◊‡ Ideal Semi	(3532)
AHCT	54AHCT58	◊‡ Ideal Semi	(3532)		HEF4086B	Signetics			74AHCT32	◊‡ Ideal Semi	(3532)
	74AHCT58	◊‡ Ideal Semi	(3532)	Gates, OR					KS74AHCT32	Samsung	175
	KS74AHCT58	Samsung		Single 2-Input	BU4S71	ROHM		C	MM54C32	† National	
Quad Select				Dual 4-Input	NJU74HC4072	◊ NJR	110		MM74C32	National	
4XXX	CD4019B	‡ Harris		HC	M74HC4072	SGS-Thomson		HC	CD54HC32	◊† Harris	
	CD4019BE	Harris			TC74HC4072A	Toshiba			CD74HC32	• Harris	
	CD4019A	‡ Micrel		4XXX	CD4072B	‡ Harris			HD74HC32	Hitachi	180
					CD4072BE	Harris			M74HC32	Mitsubishi	
					CD4072B	‡ Micrel	115		MC54HC32A	† Motorola	
									MC74HC32A	Motorola	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Gates, OR (Cont'd)								Quad 2-Input (Cont'd)			
Quad 2-Input HC				Dual 4-Input HCT	CD54HCT4002	† Harris		Quad 2-Input AHCT	54AHCT02	◊ Ideal Semi	(3532)
					CD74HCT4002	Harris			74AHCT02	◊ Ideal Semi	(3532)
					74HCT4002	Signetics			KS74AHCT02	Samsung	
	MM54HC32	† National		4XXX	CD4002B	‡ Harris	65	C	MM54C02	† National	140
	MM74HC32	National			CD4002BE	Harris			MM74C02	National	
	M74HC32	SGS-Thomson			CD4002A	‡ Micrel		HC	GD74HC02	GoldStar	145
	LR74HC32	Sharp			CD4002B	‡ Micrel			CD54HC02	† Harris	
	74HC32	◊ Signetics	5		MC14002BC	Motorola			CD74HC02	◊ Harris	
	SN54HC32	† TI			MC14002UBC	Motorola			HD74HC02	Hitachi	145
	SN74HC32	TI			CD4002A	National			MC54HC02A	† Motorola	
	SN74HC7032	TI			CD4002BC	National			MC74HC02A	Motorola	
	TC74HC32A	Toshiba			CD4002BM	† National			MM54HC02	† National	
HCT	GD74HCT32	GoldStar	10		HCC4002B	† SGS-Thomson			MM74HC02	National	
	CD54HCT32	† Harris			HCF4002B	◊ SGS-Thomson			M74HC02	SGS-Thomson	150
	CD74HCT32	◊ Harris			HEF4002B	Signetics			LR74HC02	Sharp	
	MM54HCT32	† National			TC4002B	Toshiba (3727)			74HC02	◊ Signetics	
	MM74HCT32	National							SN54HC02	† TI	
	74HCT32	◊ Signetics	15	Triple 3-Input AC	NJU74HC27	◊ NJR			SN74HC02	◊ TI	155
	SN74HCT32	TI			74AC11027	Signetics			SN74HC7002	TI	
	TC74HCT32A	Toshiba			SN54AC11027	† TI			TC74HC02A	Toshiba	
HCTLS	54HCTLS32	◊ Ideal Semi (3533)		ACT	74ACT11027	Signetics					
	74HCTLS32	◊ Ideal Semi (3533)			SN54ACT11027	† TI		HCT	CD54HCT02	† Harris	
	KS74HCTLS32	Samsung	20		74ACT11027	◊ TI			CD74HCT02	◊ Harris	
HCTS	HCTS32MS	‡ Harris		AHCT	KS74AHCT27	Samsung	85		54HCTLS02	◊ Ideal Semi (3533)	
4XXX	GD4071B	‡ GoldStar		HC	CD54HC27	† Harris			74HCTLS02	◊ Ideal Semi (3533)	160
	CD4071B	‡ Harris			HD74HC27	Hitachi			KS74HCTLS02	Samsung	
	CD4071BE	Harris			M74HC27	Mitsubishi	90		74HCT02	◊ Signetics	
	CD4071B	‡ Micrel	25		MC54HC27	† Motorola			SN74HCT02	TI	
	MC14071BC	Motorola			MC74HC27	Motorola			TC74HCT02A	Toshiba	
	CD4071BC	National			MM54HC27	† National		4XXX	GD4001B	‡ GoldStar	165
	CD4071BM	† National			MM74HC27	National			CD4001A	† Harris	
	HCC4071B	† SGS-Thomson			M74HC27	SGS-Thomson			CD4001B	‡ Harris	
	HCF4071B	◊ SGS-Thomson	30		LR74HC27	Sharp			CD4001BE	Harris	
	HEF4071B	Signetics			74HC27	◊ Signetics	95		CD4001UB	† Harris	
	TC4071B	Toshiba (3727)			SN54HC27	† TI			CD4001UBE	Harris	
Quad 2-Input (LSTTL Compatible) HCT	MC54HCT32A	◊ Motorola			SN74HC27	TI			CD4001A	‡ Micrel	
	MC74HCT32A	◊ Motorola			TC74HC27A	Toshiba			CD4001B	‡ Micrel	
Quad 2-Input with Schmitt Trigger Inputs				HCT	CD54HCT27	† Harris	100		MC14001BC	Motorola	
	NJU74HC7032	◊ NJR	35		CD74HCT27	◊ Harris			MC14001UBC	Motorola	
Quad 2-Input ACT	TC74ACT32	◊ Toshiba			74HCT27	◊ Signetics			CD4001A	National	175
Quadruple 2-Input Exclusive-OR Gate				HCTLS	KS74HCTLS27	Samsung	105		CD4001BC	National	
AC	74AC11086	TI		4XXX	CD4025B	‡ Harris			CD4001BM	† National	
ACT	74ACT11086	TI			CD4025BE	Harris			BU4001B	ROHM	
					CD4025UBE	† Harris			HCC4001B	† SGS-Thomson	

◊ Available in Surface Mount Packages

DIGITAL-CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Gates, Exclusive OR				Gates, Exclusive NOR				Dual 4-Bit Addressable			
Quad				Quad				AC	MC74AC256	Motorola	125
AC	CD54AC86	*† Harris		AHCT	54AHCT266	◊‡ Ideal Semi		ACT	MC74ACT256	Motorola	
	CD74AC86	* Harris				(3532)		4XXX	CD4723BC	National	
	74AC86	National			74AHCT266	Ideal Semi			CD4723BM	National	
	TC74AC86	Toshiba			KS74AHCT266	Samsung			F4723BC	National	
ACT	CD54ACT86	*† Harris	5	4XXX	CD4077B	‡ Harris		Dual 4-Bit D-Type, Three-State			
	CD74ACT86	* Harris			CD4077BE	Harris		AC	74AC11873	TI	130
	TC74ACT86	◊ Toshiba			MC14077BC	Motorola		ACT	74ACT11873	TI	
AHCT	54AHCT86	◊‡ Ideal Semi			HCC4077B	† SGS-Thomson		Quad, Bistable			
		(3532)			HCF4077B	◊ SGS-Thomson		HC	HD74HC375	Hitachi	
	74AHCT86	◊‡ Ideal Semi			HEF4077B	Signetics			M74HC77	SGS-Thomson	
		(3532)			TC4077B	Toshiba (3727)			SN74HC375	TI	
	KS74AHCT86	Samsung							TC74HC375A	Toshiba	
C	MM54C86	‡ Micrel		Quad 2-Input	NJU4030B	NJR	10	Quad Bistable Transparent			
	MM54C86	† National		AC	NJU74HC266	◊ NJR		AHCT	KS74AHCT75	Samsung	135
	MM74C86	National						HCTLS	KS74HCTLS75A	Samsung	
HC	CD54HC86	*† Harris		ACT	MC74AC810	◊ Motorola		Quad Clocked D			
	CD74HC86	* Harris	15		74AC11810	Signetics		4XXX	GD4042B	† GoldStar	
	HD74HC386	Hitachi		HC	CD54HC7266	† Harris			CD4042AE	Harris	
	HD74HC86	Hitachi			CD74HC7266	Harris			CD4042B	† Harris	140
	M74HC86	Mitsubishi			M74HC266	Mitsubishi			CD4042BE	Harris	
	MC54HC86	† Motorola			M74HC266A	Mitsubishi			CD4042A	‡ Micrel	
	MC74HC86	Motorola	20		MC54HC266	† Motorola			CD4042B	‡ Micrel	
	MM54HC86	† National			MC54HC266	† Motorola			MC14042BC	Motorola	
	MM74HC86	National			MC74HC7266	† Motorola			CD4042BC	National	
	M74HC386	SGS-Thomson			MM54HC7266	† National			CD4042BM	† National	145
	M74HC86	SGS-Thomson			MM74HC7266	National			HCC4042B	† SGS-Thomson	
	LR74HC86	Sharp			M74HC266	SGS-Thomson			HCF4042B	◊ SGS-Thomson	
	74HC86	* Signetics	25		M74HC7266	SGS-Thomson			HEF4042B	Signetics	
	SN54HC386	† TI			LR74HC266	Sharp			TC4042B	Toshiba (3727)	
	SN54HC86	† TI			74HC7266	Signetics		Quad D-Type			
	SN74HC386	TI			SN54HC266	† TI		AHCT	KS74AHCT77	Samsung	150
	SN74HC86	TI	30		SN74HC266	TI		HC	M74HC375	SGS-Thomson	
	SN74HC86	TI			SN74HC7266	TI		HCTLS	KS74HCTLS77	Samsung	
	TC74HC386A	Toshiba			TC74HC7266A	Toshiba		Quad NAND R/S			
	TC74HC86A	Toshiba						4XXX	CD4044B	Harris	
HCT	CD54HCT86	*† Harris		HCT	54HCTLS266	◊‡ Ideal Semi			CD4044A	‡ Micrel	155
	CD74HCT86	* Harris				(3534)			CD4044B	‡ Micrel	
	54HCTLS86	◊‡ Ideal Semi	35		74HCTLS266	◊‡ Ideal Semi			MC14044BC	Motorola	
		(3533)				(3534)			CD4044A	National	
	74HCTLS86	◊‡ Ideal Semi							CD4044BC	National	
		(3533)							CD4044BM	† National	
	KS74HCTLS86	Samsung			KS74HCTLS266	Samsung			HCC4044B	† SGS-Thomson	160
	M74HCT86	SGS-Thomson							HCF4044B	◊ SGS-Thomson	
	74HCT86	* Signetics							HEF4044B	Signetics	
	TC74HCT86A	Toshiba							TC4044B	Toshiba	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

^aBehavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line
Latches (Cont'd)							
Octal, Transparent, Non-Inv.	HCT	MC54HCT573A	60	Octal Transparent, Three-State, Inverted Output HC	MM54HC533	† National	(Cont'd)
					MM54HC563	† National	
Octal Transparent, Non-Inverting FCT	QST74FCT373	Quality Semi (3613)			MM74HC533	National	
	QST74FCT573	Quality Semi (3613)			MM74HC563	National	
Octal Transparent, Non-Inverting, Three-State FCT	QST74FCT2373	Quality Semi			M74HC533	SGS-Thomson	
	QST74FCT2573	Quality Semi			LR74HC533	Sharp	
Octal Transparent, Three-State ACQ	74ACQ533	National			LR74HC563	Sharp	
	54ACQ373	† National			74HC533	* Signetics	
	54ACQ533	† National			74HC563	* Signetics	
	74ACQ373	National			SN54HC533	† TI	
ACTQ	54ACTQ373	† National			SN54HC563	† TI	
	54ACTQ533	† National			SN74HC533	Ti	
	74ACTQ373	National			SN74HC563	Ti	
	74ACTQ533	National			TC74HC563A	Toshiba	
PCT	P54PCT373A	Performance		HCT	MV74HCT533	GEC Plessey	
	P54PCT533A	Performance			MV74HCT563	GEC Plessey	
	P74PCT373A	Performance			54HCT533SOS	GEC Plessey	
	P74PCT533A	Performance			54HCT563SOS	GEC Plessey	
Octal Transparent, Three-State, Inverted Output AC	CD54AC533	* † Harris			74HCT533	GEC Plessey	
	CD74AC533	* Harris			74HCT563	GEC Plessey	
	TC74AC533	Toshiba			CD54HCT533	* † Harris	
	TC74AC563	Toshiba			CD54HCT563	* † Harris	
ACT	CD54ACT533	* † Harris			CD74HCT533	* Harris	
	CD74ACT533	* Harris			CD74HCT563	* Harris	
	54ACT563	† National			HD74HCT533	Hitachi	
	74ACT563	National			54HCTL5533	Quality Semi (3534)	
	74ACT11533	* Ti			54HCTL563	Quality Semi (3534)	
	V54ACT533	† VTC			74HCTL5533	Quality Semi (3534)	
	V54ACT563	† VTC			74HCTL563	Quality Semi (3534)	
	V54ACT580	† VTC			MM54HCT533	† National	
	V74ACT533	VTC			MM74HCT533	National	
	V74ACT563	VTC			KS74HCTL5533	Samsung	
	V74ACT580	VTC			KS74HCTL563	Samsung	
AHCT	54AHCT563	Quality Semi (3533)			M74HCT533	SGS-Thomson	
	74AHCT533	Quality Semi (3533)			74HCT533	* Signetics	
	74AHCT563	Quality Semi (3533)			74HCT563	* Signetics	
	KS74AHCT533	Samsung			SN74HCT533	* Ti	
	KS74AHCT563	Samsung			SN74HCT563	* Ti	
BCT	SN54BCT533	† Ti			TC74HCT563A	Toshiba	
FCT	IDT54FCT533	* † IDT		PCT	P54PCT533	Performance	
	IDT54FCT533A	* † IDT			P74PCT533	Performance	
	IDT54FCT533AT	* † IDT		SC	MV74SC533	GEC Plessey	
	IDT54FCT533CT	* † IDT			MV74SC563	GEC Plessey	
	IDT54FCT533T	* † IDT		Octal Transparent, Three-State, Non-Inverting HC	MC54HC573A	Motorola	
	IDT74FCT533	* † IDT			MC74HC573A	Motorola	
	IDT74FCT533A	* † IDT		Octal with Readback HCTL5	KS74HCTL5793	Samsung	
	IDT74FCT533AT	* † IDT		Octal, Three-State ACQ	54ACQ563	† National	
	IDT74FCT533CT	* † IDT			74ACQ563	National	
	IDT74FCT533T	* † IDT		ACTQ	54ACTQ563	† National	
	IDT74FCT533AT	* † IDT			74ACTQ563	National	
	IDT74FCT533CT	* † IDT		Octal Three-State, Inverting BCT	SN54BCT534	† Ti	
	IDT74FCT533T	* † IDT		Octal, Three-State, Inverting, Transparent HC	MC54HC533A	Motorola	
	V54FCT533	* † VTC			MC74HC533A	Motorola	
	V74FCT533	* † VTC		Octal, Three-State, Non-Inverting HC	MC54HC373A	Motorola	
					MC74HC373A	Motorola	
HC	CD54HC533	* † Harris		4-Bit Bistable HC	CD54HC75	† Harris	
	CD54HC563	* † Harris			CD74HC75	Harris	
	CD74HC533	* Harris			HD74HC75	Hitachi	
	CD74HC563	* Harris			M74HC75	Mitsubishi	
	HD74HC533	Hitachi			MC54HC75	Motorola	
	HD74HC563	Hitachi			MC74HC75	Motorola	
	MC54HC563	† Motorola			MM54HC75	† National	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

^aBehavioral Model Available

♦ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Latches (Cont'd)											
8-Bit, Transparent AC	MC74AC845	Motorola		10-Bit Transparent, D-Type, Inverting HC	M74HC842-1	Mitsubishi		8-Bit Transparent, D-Type, Three-State, Non-Inverting ACT	V54ACT845	VTC	
	54AC843	National		HCT	M74HCT842-1	Mitsubishi			V74ACT845	VTC	
	74AC843	National									
ACT	MC74ACT845	Motorola		10-Bit Transparent, D-Type, Non-Inverting HC	M74HC841-1	Mitsubishi		9-Bit Transparent AC	TC74AC843	Toshiba	
FCT	QS74FCT845	Quality Semi	(3614)	HCT	M74HCT841-1	Mitsubishi		ACT	TC74ACT843	Toshiba	110
8-Bit Transparent, D-Type, Three-State ACT	SN54ACT11373	* TI	5	10-Bit Transparent, D-Type, Three-State, Inverting AC	74AC11842	TI		9-Bit Transparent, D-Type, Three-State, Inverting ACT	74ACT11844	TI	
				AHCT	KS74AHCT842	Samsung			V54ACT844	VTC	
8-Bit Transparent, D-Type, Three-State, Inverting AC	74AC11533	TI		BCT	SN54BCT29842	TI			V74ACT844	VTC	
	74AC11846	TI		FCT	IDT54FCT844A	IDT		9-Bit Transparent, D-Type, Three-State, Non-Inverting ACT	74ACT11843	TI	115
BCT	SN54BCT29846	TI			IDT74FCT844A	IDT			V54ACT843	VTC	
FCT	IDT54FCT845B	IDT	10		V54FCT842A	VTC			V74ACT843	VTC	
	IDT74FCT846A	IDT			V74FCT842A	VTC					
	IDT74FCT846B	IDT		10-Bit Transparent, D-Type, Three-State, Non-Inverting AC	AM29C841AC	AMD		Memories			
	V54FCT845A	VTC		AHCT	KS74AHCT841	Samsung		Cache Data RAM (2Kx16x2 static RAM) C	MS82C308-35	Mosel	
	V54FCT846A	VTC		BCT	SN54BCT29841	TI			MS82C308-45	Mosel	
	V74FCT846A	VTC	15	FCT	IDT54FCT841A	IDT			MS82C308-55	Mosel	
8-Bit Transparent, D-Type, Three-State, Non-Inverting AC	74AC11845	TI			IDT54FCT841AT	IDT		Cache Tag RAM, Open Drain (2048x8) ACT	SN74ACT2154A-20	TI	120
FCT	IDT54FCT845A	IDT			IDT54FCT841B	IDT			SN74ACT2154A-25	TI	
	IDT74FCT845A	IDT			IDT54FCT841BT	IDT					
	IDT74FCT845B	IDT			IDT54FCT841C	IDT		Cache Tag RAM, 512x8 TMS2150	TI		
PCT	P54PCT845A	Performance	20		IDT54FCT841CT	IDT					
	P54PCT845B	Performance			IDT74FCT841A	IDT		Cache Tag RAM (16392x5) ACT	SN74ACT2163-20	TI	75
	P74PCT845A	Performance			IDT74FCT841AT	IDT					
	P74PCT845B	Performance			IDT74FCT841B	IDT		Cache Tag RAM (2048x8) ACT	SN74ACT2152A-20	TI	
8-Bit Transparent, Non-Inverting, Three-State FCT	QS74FCT2845	Quality Semi			IDT74FCT841BT	IDT			SN74ACT2152A-25	TI	
					IDT74FCT841C	IDT			SN74ACT2152A-25	TI	125
8-Bit Transparent, Three-State AC	54AC845	National	25		IDT74FCT841CT	IDT					
	74AC845	National			V54FCT841A	VTC		Cache Tag RAM (512x9) ACT	SN74ACT2150A-20	TI	
ACT	54ACT845	National			V74FCT841A	VTC			SN74ACT2150A-30	TI	
	74ACT845	National									
8-Bit, Three-State, Non-Inverting ACT	74ACT11845	TI		PCT	P54PCT841A	Performance		Cache Tag RAM, 68030 Interface (2048x8) ACT	SN74ACT2155-22	TI	80
					P54PCT841B	Performance					
9-Bit Interface, D-Type, Three-State	AM29C843AC	AMD	30		P74PCT841A	Performance					
					P74PCT841B	Performance					
9-Bit, Transparent AC	MC74AC843	Motorola		10-Bit Transparent, Non-Inverting, Three-State FCT	QS74FCT2841	Quality Semi		EEPROM, 128x8 (with I ² C bus interface) PCF8581	Signetics		
ACT	MC74ACT843	Motorola							PCF8581C	Signetics	130
FCT	QS74FCT843	Quality Semi	(3614)	16-Bit Addressable	LT74ATC16	LSTI		FIFO Register (4-Bit by 16-word) HC	TC74HC40105A	Toshiba	
9-Bit Transparent, D-Type, Three-State, Inverting AC	74AC11844	TI		16-Bit Bidirectional Latch with Byte Swap FCT	IDT49FCT601	IDT		FIFO, 4x16 Expandable HCT	74HCT7030	Signetics	
AHCT	KS74AHCT844	Samsung									
BCT	SN54BCT29844	TI	35	32-Bit Addressable	LT54TC32	LSTI		FIFO (64x9) AC	54AC2708	National	
FCT	IDT54FCT844B	IDT			LT74TC32	LSTI			74AC2708	National	
	IDT74FCT844B	IDT		10-Bit Transparent AC	TC74AC841	Toshiba		ACT	54ACT2708	National	135
	V54FCT844A	VTC		ACT	TC74ACT841	Toshiba			74ACT2708	National	
	V74FCT844A	VTC	40					First-In, First-Out (FIFO) Memory, 512x9 ACT	54ACT725	National	
9-Bit Transparent, D-Type, Three-State, Non-Inverting AC	74AC11843	TI		10-Bit Transparent, D-Type, Three-State, Inverting ACT	74ACT11842	TI			74ACT725	National	
AHCT	KS74AHCT843	Samsung			V54ACT842	VTC		RAM, 16x4, Three-State	MM54C989	National	140
BCT	SN54BCT29843	TI			V74ACT842	VTC			MM74C989	National	
FCT	IDT54FCT843B	IDT		10-Bit Transparent, D-Type, Three-State, Non-Inverting ACT	54ACT841	National		Register File, Dual-Access (4-port)	AM29C334	AMD	
	IDT74FCT843B	IDT			74ACT841	National					
	V54FCT843A	VTC	45		74ACT11841	TI		Register File, 3 Port (8x8)	LRF07C	LogicDev	
	V74FCT843A	VTC			V54ACT841	VTC			LRF07M	LogicDev	
PCT	P54PCT843A	Performance		8-Bit Transparent, D-Type, Three-State, Inverting ACT	74ACT11846	TI		Dual-Port RAM, 256 Bytes HC	MCM68HC34	Motorola	
	P54PCT843B	Performance			V54ACT846	VTC					
	P74PCT843A	Performance			V74ACT846	VTC					
	P74PCT843B	Performance	50	8-Bit Transparent, D-Type, Three-State, Non-Inverting ACT	54ACT843	National					
9-Bit Transparent, Non-Inverting, Three-State FCT	QS74FCT2843	Quality Semi			74ACT843	National					
10-Bit Transparent FCT	QS74FCT841	Quality Semi	(3614)								

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Memories (Cont'd)				256-Bit RAM (32x8) (Cont'd)							
Octal Memory Driver (BiCMOS)				HC				Dual 4-Channel, Inverting, Three-State AC			
BCT	SN74BCT2240	° TI		HC1824	° Hughes			74AC11353			
	SN74BCT2241	° TI		HC1824C	° Hughes			Dual 4-Channel Multiplexer/Demultiplexer HC			
	SN74BCT2244	° TI		256-Bit RAM (64x4)				M74HC4052			
4-Bit x 16 FIFO Register				C				Dual 4-Channel, Three-State AC			
HC	CD54HC40105	† Harris	5	1024x9-Bit Parallel In/Out FIFO				CD54AC253			
	CD74HC40105	Harris		AC				CD74AC253			
	74HC40105	Signetics		ACT				54AC253			
HCT	CD54HCT40105	† Harris		CD74AC7202				74AC253			
	CD74HCT40105	Harris		CD54ACT7202				74AC11253			
	74HCT40105	Signetics		CD74ACT7202				TC74AC253			
8-Bit PIPO Register				Multiplexers (Digital)				ACT			
HC	MM74HC323	National	10	Presetttable Fully Synchronous, Synchronous Clear HC				CD54ACT253			
	M74HC323	SGS-Thomson		M74HC162				CD74ACT253			
8-Bit SIPO Shift Register				Dual 1-of-4 Data Selector/Multiplexer, Three-State HCTLS				54ACT253			
HC	M74HC4094	SGS-Thomson		KS74HCTLS353				74ACT253			
10-Bit Memory Driver (BiCMOS)				Dual 1-of-4 Data Selectors/Multiplexers, Three-State AHCT				74ACT11253			
BCT	SN74BCT2827A	° TI		KS74AHCT253				HC			
	SN74BCT2828A	° TI		KS74AHCT353				CD54HC253			
16-Bit FIFO (4x4)				HCTLS				CD74HC253			
4XXX	CD40105B	† Harris	15	Dual 2-to-4 Line Decoder/Demultiplexer AC				HD74HC253			
	CD40105BE	Harris		74ACT11139				HD74HC257			
	HCC40105B	† SGS-Thomson		74AC11139				MC54HC253			
	HCF40105B	SGS-Thomson		74AC11239				MC74HC253			
16-Bit Multiport Register File (4x4 read while write RAM)				ACT				MM54HC253			
4XXX	MC14580BC	Motorola	20	Dual 4:1 Multiplexer HCT				MM74HC253			
	HCC40208B	† SGS-Thomson		TC74HCT352A				M74HC253			
	HCF40208B	SGS-Thomson		Dual 4:1 Multiplexer, Three-State HC				LR74HC253			
16-Bit (4x4) Register File				TC74HC353A				PC74HC253			
AHCT	KS74AHCT670	Samsung		Dual 4-Bit ACT				SN54HC253			
HC	CD54HC670	† Harris	25	MC74ACT253				SN74HC253			
	CD74HC670	Harris		Dual 4-Channel AC				TC74HC253			
	MC74HC670	Motorola		CD54AC153				HCT			
	M74HC670	SGS-Thomson		CD74AC153				CD74HCT253			
	74HC670	° Signetics		54AC153				MM54HCT253			
	TC74HC670A	Toshiba		74AC153				MM74HCT253			
HCT	CD54HCT670	† Harris	30	74AC11153				Dual 4-Channel, Three-State, Inverting HC			
	CD74HCT670	Harris		ACT				HD74HC353			
	74HCT670	° Signetics		Cell				M74HC353			
64-Bit Multiport Register File (8x8) with 5 Ports				74153				SN74HC353			
LRF08C	°† LogicDev			SN74153				Dual 4-Input AC			
LRF08M	°† LogicDev			HC				MC74AC153			
64-Bit RAM (16x4)				CD54HC153				MC74AC253			
C	MM54C89	‡ Micrel	35	CD74HC153				MC74AC352			
	MM54C89	† National		HD74HC153				MC74AC353			
	MM74C89	National		M74HC253				ACT			
4XXX	CD40114B	† Harris		MC54HC153				Dual 4-Input Multiplexer AC			
64-Bit RAM (64x1)				MC74HC153				74AC11153			
4XXX	HEF4505B	Signetics		MM54HC153				74ACT11153			
64x4-Bit FIFO, Three-State				MM74HC153				Dual 4-Input Multiplexer, Inverting AC			
HC	CD54HC7030	† Harris	40	M74HC153				74AC11352			
	CD74HC7030	Harris		LR74HC153				ACT			
HCT	CD54HCT7030	† Harris		SN54HC153				Dual 4-Input Multiplexer, Three-State AC			
	CD74HCT7030	Harris		SN74HC153				74AC11253			
65x56-Bit FIFO				US74HC153				74ACT11253			
AC	CD54AC7402	† Harris		HCT				Dual 4-Input Multiplexer, Three-State, Inverting AC			
	CD74AC7402	Harris		CD54HCT153				74AC11353			
ACT	CD54ACT7402	† Harris	45	CD74HCT153				ACT			
	CD74ACT7402	Harris		MM54HCT153				Dual 4-Input, Three-State FCT			
256-Bit RAM (256x1)				MM74HCT153				QST74FCT2153			
C	MM54C200	‡ Micrel		4XXX				QST74FCT2253			
	MM54C200	† National		MC14539BC				Dual 4-Line to 1-Line Data Selector/Multiplexer HCTLS			
	MM74C200	National		HEF4539B				KS74HCTLS352			
4XXX	HEF4720B	Signetics	50	TC4539B				Dual 4-Line to 1-Line Data Selectors/Multiplexers AHCT			
256-Bit RAM (32x8)				Dual 4-Channel, Inverting AC				KS74AHCT352			
CDP1824	† Harris			74AC11352				Dual 4-to-1 Data Selector/Multiplexer ACT			
CDP1824C	† Harris			74ACT11352				SN54ACT11253			
HB1824	† Hughes			74ACT11353				°† TI			
HB1824C	† Hughes			HC				SN54ACT11257			
				M74HC352				°† TI			
				SN74HC352				SN54ACT11353			
								°† TI			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multiplexers (Digital) (Cont'd)				Quad 2-Input Data Selector HC (Cont'd)				Quad 2-Input Data Selector, Three-State (Cont'd)			
Dual 4-Channel	NJU74HC153	◊ NJR	5	74HC157	◊ Signetics	60	AHCT	54AHCT257	◊ Ideal Semi	125	
	NJU74HC253	◊ NJR		SN54HC157	*† TI			74AHCT257	◊ Ideal Semi		
	NJU74HC352	◊ NJR		SN74HC157	* TI				(3532)		
	NJU74HC353	◊ NJR		TC74HC157A	Toshiba				(3532)		
	TC74HC352	Toshiba		US74HC157	Universal			KS74AHCT257	Samsung		
AC	TC74AC153	◊ Toshiba	10	HCT	GD74HCT157	GoldStar	65	FCT	IDT54FCT257AT	◊† IDT	130
Dual 4-Channel Multiplexer				CD54HCT157	*† Harris			IDT54FCT257CT	◊† IDT		
ACT	TC74ACT153	◊ Toshiba		CD74HCT157	* Harris			IDT54FCT257T	◊† IDT		
Triple 2-Channel Multiplexer/Demultiplexer				54HCTLS157	◊ Ideal Semi			IDT74FCT257A	◊ IDT		
HC	M74HC4053	Mitsubishi			(3534)			IDT74FCT257AT	◊ IDT		
Quad 1-of-2 Data Selector/Multiplexer			15	74HCTLS157	◊ Ideal Semi	70	70	HC	CD54HC257	*† Harris	135
ACT	74ACT11158	TI			(3534)				CD74HC257	* Harris	
Quad 2:1 Multiplexer				KS74HCTLS157	Samsung				MC54HC257	† Motorola	
AC	TC74AC157	Toshiba		M74HCT157	SGS-Thomson				MC74HC257	Motorola	
Quad 2:1 Multiplexer, Three-State				74HCT157	* Signetics				MM54HC257	† National	
HCT	TC74HCT257A	Toshiba	20	TC74HCT157A	Toshiba	75	75		MM74HC257	National	140
TC74HCT258A	Toshiba	PCT		P54PCT157	◊ Performance			M74HC257	SGS-Thomson		
Quad 2-Channel					P54PCT157A	◊ Performance			LR74HC257	Sharp	
HC	M74HC258	SGS-Thomson			P74PCT157	◊ Performance			74HC257	* Signetics	
Quad 2-Channel, Inverting					P74PCT157A	◊ Performance			SN54HC257	† TI	
HC	MM54HC258	† National	25	Quad 2-Input Data Selector, Inverting		80	80		SN74HC257	TI	145
MM74HC258	National	AC		CD54AC158	*† Harris			TC74HC257A	Toshiba		
Quad 2-Input					CD74AC158	* Harris					
AC	MC74AC157	◊ Motorola			54AC158	† National					
	MC74AC158	◊ Motorola			74AC158	National					
	MC74AC257	◊ Motorola	30		74AC11158	TI	85				150
	MC74AC258	◊ Motorola			TC74AC158	Toshiba					
ACT	MC74ACT157	◊ Motorola		ACT	CD54ACT158	*† Harris					
	MC74ACT158	◊ Motorola			CD74ACT158	* Harris					
	MC74ACT257	◊ Motorola			54ACT158	† National					
	MC74ACT258	◊ Motorola	35		74ACT158	National	90				155
HC	M74HC257	Mitsubishi									
HCT	MM54HCT157	† National									
MM74HCT157	National										
Quad 2-Input Data Selector											
AC	CD54AC157	*† Harris	40				95				160
	CD74AC157	* Harris									
	54AC157	† National									
	74AC157	National									
	74AC11157	TI									
ACT	CD54ACT157	*† Harris	45				100				165
	CD74ACT157	* Harris									
	54ACT157	† National									
	74ACT157	National									
	74ACT11157	TI									
AHCT	54AHCT157	◊ Ideal Semi	50				105				170
		(3532)									
	74AHCT157	◊ Ideal Semi									
		(3532)									
	KS74AHCT157	Samsung									
C	MM54C157	† National	55				110				175
	MM74C157	National									
FCT	IDT54FCT157AT	◊† IDT									
	IDT54FCT157CT	◊† IDT									
	IDT54FCT157T	◊† IDT									
	IDT74FCT157AT	◊ IDT	60				115				180
	IDT74FCT157CT	◊ IDT									
	IDT74FCT157T	◊ IDT									
HC	CD54HC157	*† Harris									
	CD74HC157	* Harris									
	HD74HC157	Hitachi	65				120				185
	MC54HC157A	† Motorola									
	MC74HC157A	Motorola									
	MM54HC157	† National									
	MM54HC158	† National									
	MM74HC157	National	70				125				190
	M74HC157	SGS-Thomson									
	LR74HC157	Sharp									

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(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multiplexers (Digital) (Cont'd)								(Cont'd)			
Quad 2-Input, Inverting, Three-State HC				Quad 2-Channel, Three-State, Inverting HCT	MM54HCT258 † National MM74HCT258 National		50	8-Channel Cell FCT	SN74151-Cell IDT54FCT151AT	TI	
	SN74HC258 TI TC74HC258A Toshiba								IDT54FCT151CT † IDT		100
HCT	GD74HCT258 GoldStar CD54HCT258 * † Harris CD74HCT258 * Harris 54HCTLS258 ♦ ‡ Ideal Semi (3534) 74HCTLS258 ♦ ‡ Ideal Semi (3534)		5	Quad 2-Channel, Three-State, Non-Inverting HCT	MM54HCT257 † National MM74HCT257 National				IDT54FCT151T † IDT		
	KS74HCTLS258 Samsung M74HCT258 SGS-Thomson 74HCT258 Signetics		10	Quad 2-Input Data Selector, Inverting HC	M74HC160 Mitsubishi			HC	CD54HC151 † Harris CD74HC151 * Harris HD74HC151 Hitachi M74HC251 Mitsubishi MC54HC151 † Motorola MC74HC151 Motorola MM54HC151 † National MM74HC151 National M74HC151 SGS-Thomson LR74HC151 Sharp 74HC151 * Signetics SN54HC151 † TI SN74HC151 TI TC74HC151A Toshiba		105
PCT	P54PCT258 ♦ ‡ Performance P54PCT258A ♦ ‡ Performance P74PCT258 ♦ Performance P74PCT258A ♦ Performance			Octal 2-Channel, Three-State, Non-Inverting HC	SN74HC604 TI		55		CD54HCT151 * † Harris CD74HCT151 * Harris MM54HCT151 † National MM74HCT151 National 74HCT151 * Signetics		110
Quad 2-Input Multiplexer AC	74AC11157 Signetics		15	1-of-8 Data Selectors/Multiplexers HCTLS	KS74HCTLS151 Samsung		60		CD54HCT151 * † Harris CD74HCT151 * Harris MM54HCT151 † National MM74HCT151 National 74HCT151 * Signetics		115
ACT	74ACT11157 Signetics			1-of-8 Data Selectors/Multiplexers, Three-State AHCT	KS74AHCT251 Samsung			HCT	CD54HCT151 * † Harris CD74HCT151 * Harris MM54HCT151 † National MM74HCT151 National 74HCT151 * Signetics		120
Quad 2-Input Multiplexer, Inverting AC	74AC11158 Signetics			HCTLS	KS74HCTLS251 Samsung				CD54HCT151 * † Harris CD74HCT151 * Harris MM54HCT151 † National MM74HCT151 National 74HCT151 * Signetics		125
ACT	74ACT11158 Signetics			1-Of-16 Data Generator/Multiplexer W/ 3-State Outputs AC	74AC11150 TI		65	8-Channel Data Selector HC	HD74HC152 Hitachi SN54HC152 † TI SN74HC152 TI		130
Quad 2-Input Multiplexer, Three-State AC	74AC11257 Signetics		20	ACT	74ACT11150 TI				CD4512B † Harris CD4512BE Harris CD4512B ‡ Micrel MC14512A † Motorola MC14512C Motorola CD4512BC National CD4512BM † National HCC4512B † SGS-Thomson HCF4512B ♦ SGS-Thomson HEF4512B Signetics TC4512B Toshiba (3727)		135
ACT	74ACT11257 Signetics			2-to-4 Decoder/Demultiplexer AC	74AC11139 TI		70	4XXX	CD4512B † Harris CD4512BE Harris CD4512B ‡ Micrel MC14512A † Motorola MC14512C Motorola CD4512BC National CD4512BM † National HCC4512B † SGS-Thomson HCF4512B ♦ SGS-Thomson HEF4512B Signetics TC4512B Toshiba (3727)		140
Quad 2-Input Multiplexer, Three-State, Inverting AC	74AC11258 Signetics			2-to-4 Decoder/Demultiplexer, Dual AC	74AC11239 TI				MC14067BC Motorola		145
ACT	74ACT11258 Signetics			3-to-8 Line Decoder/Demultiplexer AC	74AC11138 Signetics 74AC11238 Signetics SN54AC11138		65	8-Channel Multiplexer/Demultiplexer HC	M74HC4051 Mitsubishi		150
Quad 2-Input, Non-Inverting FCT	QS74FCT157 ♦ Quality Semi (3613) QS74FCT2157 ♦ Quality Semi (3614) QS74FCT257 ♦ Quality Semi (3613)		25		ACT 74ACT11138 Signetics 74ACT11238 Signetics SN54ACT11138 † TI		75	8-Channel with Latch, Three-State HC	MM54HC354 † National MM54HC356 † National MM74HC354 National MM74HC356 National		155
				4-Bit AND/OR Selector 4XXX	MC14519BC Motorola CD4519BC National CD4519BM † National HEF4519B Signetics TC4519B Toshiba (3727)		80	8-Channel, Three-State HC	MM54HC251 † National MM74HC251 National		160
Quad 2-Input with Output Register PCT	P54PCT398 ♦ ‡ Performance P54PCT398A ♦ ‡ Performance P74PCT398 ♦ Performance P74PCT398A ♦ Performance			4-Input, Three-State, Dual FCT	QS74FCT153 ♦ Quality Semi (3613) QS74FCT253 ♦ Quality Semi (3613)		85	8-Channel, Three-State AC	CD54AC251 * † Harris CD74AC251 * Harris 54AC251 † National 74AC251 National 74AC11251 TI TC74AC251 Toshiba 74AC251 Toshiba		
Quad 2-Input, with Storage AHCT	54AHCT399 ♦ ‡ Ideal Semi (3533) 74AHCT399 ♦ ‡ Ideal Semi (3533) KS74AHCT399 Samsung		30				90	Cell	SN74251 TI		
				4-Line to 16-Line Decoder/Demultiplexer AC	74AC11154 TI		95	FCT	IDT54FCT251AT		
Cell	SN74298 TI		35	ACT	74ACT11154 TI				IDT54FCT251CT † IDT		
HC	HD74HC298 Hitachi MC74HC298 Motorola MM54HC298 † National MM74HC298 National M74HC298 SGS-Thomson SN74HC298 TI TC74HC298A Toshiba		40	HCTLS	KS74HCTLS154 Samsung				IDT54FCT251T † IDT		
				4-to-16 Line Decoder/Demultiplexer AC	74AC11154 Signetics ACT 74ACT11154 Signetics				IDT74FCT251AT † IDT		
Quad 2-Input, Three-State, Inverting FCT	QS74FCT2258 ♦ Quality Semi (3614)		45	ACT	74ACT11154 Signetics						
Quad 2-Input, Three-State, Non-Inverting FCT	QS74FCT2257 ♦ Quality Semi			8-Channel NUJ74HC151 ♦ NJR KS74AHCT151 Samsung							
Quad 2-Port Register ACT	54ACT399 † National 74ACT399 National			AC	CD54AC151 * † Harris CD74AC151 * Harris 54AC151 † National 74AC151 National 74AC11151 * TI TC74AC151 Toshiba						
Quad 2-Channel ACT	TC74ACT257 ♦ Toshiba TC74ACT258 ♦ Toshiba			ACT	CD54ACT151 * † Harris CD74ACT151 * Harris 54ACT151 † National 74ACT151 National 74ACT11151 * TI						
Quad 2-Channel Multiplexer ACT	TC74ACT157 ♦ Toshiba			C	MM54C151 † National MM74C151 National						
Quad 2-Channel Multiplexer (10 V) ACT	TC74ACT158 ♦ Toshiba										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multiplexers (Digital) (Cont'd)				Multiplexers (Digital) (Cont'd)				Dual Monostable HC (Cont'd)			
8-Channel, Three-State FCT (Cont'd)				16-Channel Multiplexer/Demultiplexer 4XXX MCL14097BC Motorola				TC74HC423 Toshiba			
IDT74FCT251CT ♦ IDT				16-Input Demultiplexer LT74TC16 ♦ LSTI				TC74HC423A Toshiba			
IDT74FCT251T ♦ IDT				16-Input Multiplexer, Three-State AC 74AC11150 Signetics				TC74HC4538A Toshiba			
HC CD54HC251 *† Harris				ACT 74ACT11150 Signetics				US74HC221 Universal			
CD54HC354 † Harris				16-Input Multiplexer, Three-State, Inverting AC 74AC11250 Signetics				CD54HCT221 † Harris			
CD54HC356 *† Harris				ACT 74ACT11250 Signetics				CD54HCT4538 † Harris			
CD74HC251 * Harris				16-Line to 1-Line Multiplexer MM54C150 † National				CD74HCT221 Harris			
CD74HC354 Harris				32-Bit LT74TV32 LSTI				CD74HCT423 Harris			
CD74HC356 * Harris				32-Bit Demultiplexer LT54TC32 ♦† LSTI				CD74HCT4538 Harris			
HD74HC251 Hitachi				8-Channel Multiplexer ACT TC74ACT151 ♦ Toshiba				74HCT221 Signetics			
HD74HC354 Hitachi				8-Channel Multiplexer, Three-State ACT TC74ACT251 ♦ Toshiba				74HCT423 Signetics			
HD74HC356 Hitachi				Multivibrators				74HCT4538 Signetics			
MC54HC251 † Motorola				Monostable/Astable, Retriggerable 4XXX CD4047B † Harris				4XXX MC14538BC Motorola			
MC54HC354 † Motorola				CD4047BE Harris				CD4538BC National			
MC74HC251 Motorola				CD4047B ‡ Micrel				CD4538BM † National			
MC74HC354 Motorola				CD4047BC National				HEF4538B Signetics			
M74HC251 SGS-Thomson				CD4047BM † National				TC4538B Toshiba (3727)			
M74HC354 SGS-Thomson				HCC4047B † SGS-Thomson				Dual Monostable Retriggerable			
M74HC356 SGS-Thomson				HCF4047B SGS-Thomson				HC NJU74HC123 ♦ NJR			
LR74HC251 Sharp				HEF4047B Signetics				CD54HC123 *† Harris			
LR74HC354 Sharp				TC4047B Toshiba (3727)				CD74HC123 * Harris			
LR74HC356 Sharp				Monostable, Dual Precision CD14538B Harris				HD74HC123 Hitachi			
74HC153 * Signetics				Dual Monostable AHCT 54AHCT123 ♦‡ Ideal Semi (3532)				M74HC123A Mitsubishi			
74HC251 * Signetics				54AHCT423 ♦‡ Ideal Semi (3533)				MM54HC123 † National			
74HC354 Signetics				74AHCT123 ♦‡ Ideal Semi (3532)				MM54HC123A † National			
74HC356 Signetics				74AHCT423 ♦‡ Ideal Semi (3533)				MM74HC123 National			
SN54HC251 † TI				KS74AHCT123 † Samsung				MM74HC123A National			
SN74HC251 TI				KS74AHCT423 † Samsung				M74HC123A SGS-Thomson			
SN74HC354 TI				C MM54C221 † National				74HC123 * Signetics			
SN74HC356 TI				HC MM74C221 National				CD54HCT123 *† Harris			
TC74HC153A Toshiba				CD54HC221 † Harris				CD74HCT123 * Harris			
TC74HC251A Toshiba				CD54HC423 † Harris				74HCT123 * Signetics			
TC74HC354A Toshiba				CD54HC4538 † Harris				4XXX GD4528B GoldStar			
TC74HC356A Toshiba				CD74HC221 Harris				CD4098B † Harris			
HCT CD54HCT251 *† Harris				CD74HC423 Harris				CD4098BE Harris			
CD54HCT354 † Harris				CD74HC4538 Harris				CD4528B ‡ Micrel			
CD54HCT356 *† Harris				HD74HC221 Hitachi				MC14528BC Motorola			
CD74HCT251 * Harris				HD74HC423 Hitachi				CD4528BC National			
CD74HCT354 Harris				HD74HC4538 Hitachi				CD4528BM † National			
CD74HCT356 * Harris				MM54HC221A † National				HCC4098B † SGS-Thomson			
MM54HCT251 † National				MM54HC423A † National				HCF4098B ♦ SGS-Thomson			
MM74HCT251 National				MM54HC4538 † National				HEF4528B Signetics			
74HCT153 * Signetics				MM74HC221A National				TC4528B Toshiba (3727)			
74HCT251 * Signetics				MM74HC423A National				Dual Precision Monostable NJU4538B NJR			
74HCT354 Signetics				MM74HC4538 National				4XXX BU4538B ROHM			
74HCT356 Signetics				M74HC123 SGS-Thomson				Dual Precision Monostable, Retriggerable, Resettable HC MC54HC4538A ♦† Motorola			
8-Input AC MC74AC151 ♦ Motorola				M74HC221 SGS-Thomson				Oscillators/Dividers			
MC74AC251 ♦ Motorola				M74HC221A SGS-Thomson				Divider, Divide by 5/6 RED5/6 LSI Comp			
ACT MC74ACT151 ♦ Motorola				M74HC423 SGS-Thomson				Divider, Divide by 6 D6 LSI Comp			
MC74ACT251 ♦ Motorola				M74HC423A SGS-Thomson				Divider, Divide by 50/60 RED50/60 LSI Comp			
8-Input Multiplexer AC 74AC11151 Signetics				M74HC4538 SGS-Thomson				Divider, Divide by 60 D60 LSI Comp			
ACT 74ACT11151 Signetics				74HC221 Signetics				Divider, Divide by 100/120 RED100/120 LSI Comp			
8-Input Multiplexer, Three-State AC 74AC11251 Signetics				74HC423 Signetics				Divider, Divide by 300/360 RED300/360 LSI Comp			
ACT 74ACT11251 Signetics				74HC4538 Signetics				Divider, Divide by 3000/3600 RED3000/3600 LSI Comp			
8-Input, Three-State ACT CD74ACT251 * Harris				TC74HC123 Toshiba				Divider, Divide by 3600 D3600 LSI Comp			
FCT QS74FCT151 ♦ Quality Semi (3613)				TC74HC123A Toshiba				(Continued)			
QS74FCT2151 ♦ Quality Semi (3614)				TC74HC221 Toshiba							
QS74FCT2251 ♦ Quality Semi (3614)											
QS74FCT251 ♦ Quality Semi (3613)											
10-Line to 4-Line Priority Encoder HC MM54HC147 National											
MM74HC147 National											
10-Line to 4-Line BCD Priority Encoder HC MM54HC147 † National											
MM74HC147 National											

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Oscillators/Dividers (Cont'd)								4-Bit Bidirectional HCT (Cont'd)			
Oscillator/Divider (programmable timer)				Dual 4-Bit Serial In/Parallel Out HC	CD54HC4015	† Harris		4XXX	KS74HCTLS193	Samsung	105
4XXX	CD4541B	† Harris			CD74HC4015	Harris			74HCT194	• Signetics	
	CD4541BE	Harris		HCT	CD54HCT4015	† Harris	45		MC14194BC	Motorola	
	MC14541BC	Motorola			CD74HCT4015	Harris		4XXX	HCC40194B	† SGS-Thomson	110
	HEF4541B	Signetics			74HCT4015	Signetics			HCF40194B	SGS-Thomson	
Oscillator/16-Stage Divider	SCL5602	Allegro Micro	5	4XXX	GD4015B	‡ GoldStar			TC40194B	Toshiba (3727)	
Oscillator/17-Stage Divider	SCL5415	Allegro Micro			CD4015BE	Harris		4-Bit Bidirectional Universal AC	MC74AC194	• Motorola	
	SCL5603	Allegro Micro			CD4015A	‡ Micrel	50		74AC11194	Signetics	
Oscillator/2 ⁰ to 2 ²⁴ Divider (programmable timer)					CD4015B	‡ Micrel		ACT	MC74ACT194	• Motorola	
4XXX	CD4536B	† Harris			MC14015BC	Motorola			74ACT11194	Signetics	115
	CD4536BE	Harris			CD4015AC	National		AHCT	KS74AHCT194	Samsung	
	MC14536BC	Motorola	10		CD4015BC	National			KS74AHCT195	Samsung	
Oscillator/2 ⁸ Divider (2–5 V supplies)	ICM7209	Harris			CD4015BM	National		HCTLS	KS74HCTLS194	Samsung	
					HCC4015B	SGS-Thomson			KS74HCTLS195	Samsung	
Oscillator/2 ¹² and 2 ¹⁷ Divider, also 2 ¹⁷ ×10 (0.01 and 0.1 output, 6.4 MHz crystal, 3–5 V supply)	ICM7207	Harris			HCF4015B	• SGS-Thomson		4XXX	CD40104B	† Harris	
					HEF4015B	Signetics		4-Bit Bidirectional Universal, Three State HC	CD54HC40104	† Harris	120
Oscillator/2 ¹² and 2 ²⁰ Divider, also 2 ²⁰ ×10 (0.1 and 1 second output with 5.2 MHz crystal, 5 V supply)	ICM7207A	Harris			TC4015B	Toshiba (3727)			CD74HC40104	Harris	
Oscillator/2 ¹² , 2 ¹⁸ , 2 ²¹ , and 2 ¹⁷ Divider (also 2 ²¹ ×60, 2–5 V supplies)	ICM7213	Harris							74HC40104	Signetics	
Oscillator/2 ¹⁶ Divider/Buffer	SCL5411	Allegro Micro	15	5XXX	TC5050	Toshiba (3727)		HCT	CD74HCT40104	Harris	
				Quad Dual-Port Register FCT	IDT54FCT399	† IDT	65		74HCT40104	Signetics	
Oscillator/2 ²¹ Divider/Buffer					IDT54FCT399A	† IDT		4-Bit D-Type, Three-State HCTLS	54HCTLS173	• ‡ Ideal Semi (3534)	125
4XXX	CD4045B	† Harris			IDT74FCT399	IDT			74HCTLS173	• ‡ Ideal Semi (3534)	
	CD4045BE	Harris			IDT74FCT399A	IDT			KS74HCTLS173	Samsung	
	HCC4045B	† SGS-Thomson		PCT	P54PCT399	• ‡ Performance		4-Bit Parallel-In/Parallel-Out	NJU74HC194	• NJR	130
	HCF4045B	• SGS-Thomson			P54PCT399A	• ‡ Performance			NJU74HC195	• NJR	
Oscillator/2 ²³ Divider	SCL5419	Allegro Micro	20		P74PCT399	• Performance		4-Bit Parallel In/Parallel Out			
					P74PCT399A	• Performance		4XXX	CD40194B	Harris	
Oscillator/2 ²⁴ Divider				Quad 64-Bit Static, Separate Clock	HEF4731B	Signetics			CD4035B	† Harris	
4XXX	GD4521B	GoldStar		4XXX	HEF4731V	† Signetics			CD4035BE	Harris	
	MC14521BC	Motorola							CD4035A	‡ Micrel	
	HEF4521B	Signetics							CD4035B	‡ Micrel	
	TC4521B	Toshiba (3727)		Octal Register with Readback	KS74AHCT794	Samsung	75		MC14035BC	Motorola	135
Oscillator/32768 Hz Divider				Octal Shift/Storage					CD4035BC	National	
	MM5368	National	25	AC	MC74AC299	• Motorola			CD4035BM	† National	
	MM5369	National		ACT	MC74ACT299	• Motorola			HCC40104B	† SGS-Thomson	
					MC74ACT323	• Motorola			HCC4035B	† SGS-Thomson	
				4-Bit					HCF40104B	SGS-Thomson	140
				AC	MC74AC350	• Motorola			HCF4035B	• SGS-Thomson	
				ACT	MC74ACT350	• Motorola	80		HEF40194B	Signetics	
				4-Bit Bidirectional					HEF4035B	Signetics	
				AC	74AC11194	TI			TC40104B	Toshiba (3727)	
				ACT	74ACT11194	TI			TC4035B	Toshiba (3727)	145
				C	MM54C95	† National		4-Bit Parallel with Clear			
					MM74C95	National		C	MM54C195	† National	
				Cell	SN74194A	TI	85		MM74C195	National	
				HC	CD54HC194	• † Harris		Cell	SN74195A-Cell	TI	
					CD74HC194	• Harris		HC	CD54HC195	† Harris	150
					HD74HC194	Hitachi			CD74HC195	Harris	
					M74HC194	Mitsubishi			HD74HC195	Hitachi	
					MC54HC194	† Motorola			HD74HC95	Hitachi	
					MC74HC194	Motorola			M74HC195	Mitsubishi	
					MM54HC194	† National			MC54HC195	† Motorola	155
					MM74HC194	National			MC74HC195	Motorola	
					M74HC194	SGS-Thomson			MM54HC195	† National	
					LR74HC194	Sharp	95		MM74HC195	National	
					74HC194	• Signetics			M74HC195	SGS-Thomson	
					SN54HC194	† TI			LR74HC195	Sharp	
					SN74HC194	TI			74HC195	Signetics	160
					TC74HC194A	Toshiba			SN54HC195	† TI	
					US74HC194	Universal	100		SN74HC195	TI	
				HCT	CD54HCT194	• † Harris			TC74HC195A	Toshiba	
					CD74HCT194	• Harris			US74HC195	Universal	
					54HCTLS193	• ‡ Ideal Semi (3534)		HCT	CD54HCT195	† Harris	165
					74HCTLS193	• ‡ Ideal Semi (3534)			CD74HCT195	Harris	
									74HCT195	Signetics	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

• Typical Value

• Behavioral Model Available

• Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Shift Registers (Cont'd)				8-Bit Parallel In/Serial Out (Cont'd)				8-Bit Serial In/Parallel Out Register with Output Latches			
4-Bit Parallel with Clear				C	MM54C165	† National		AHCT	KS74AHCT595	Samsung	
4XXX	CD40195BC	National			MM74C165	National			KS74AHCT596	Samsung	
	CD40195BM	† National		Cell	SN74165	TI	60	HC	HD74HC323	Hitachi	
	HEF40195B	Signetics		HC	CD54HC165	* † Harris			HD74HC595	Hitachi	
4-Bit, Three-State					CD74HC165	* Harris			MM54HC595	† National	125
AC	54AC350	† National	5		HD74HC165	Hitachi			MM74HC595	National	
	74AC350	National			MC54HC165	† Motorola			M74HC595	SGS-Thomson	
					MC74HC165	Motorola	65		LR74HC595	Sharp	
ACT	54ACT350	† National			MM54HC165	† National			SN54HC595	† TI	130
	74ACT350	National			MM74HC165	National			SN74HC594	TI	
4x4 Multiport					M74HC165	SGS-Thomson			SN74HC595	TI	
4XXX	CD40108B	† Harris			LR74HC165	Sharp			TC74HC323A	Toshiba	
	CD40208BE	† Harris			74HC165	* Signetics	70		TC74HC595A	Toshiba	
					74HC166	Signetics		8-Bit Serial In/Parallel Out with Output Latches			
4x4 Multiport Register					SN54HC165	† TI		ACT	74ACT11323	TI	
HC	HCC40108B	SGS-Thomson	10		SN74HC165	TI		8-Bit Serial/Parallel-In, Serial Out			
	HCF40108B	SGS-Thomson			TC74HC165A	Toshiba		AHCT	54AHCT166	‡ Ideal Semi	135
					US74HC165	Universal	75			(3532)	
8-Bit (asynchronous parallel or synchronous serial operation) Parallel In/Serial Out				HCT	CD54HCT165	* † Harris			KS74AHCT166	Samsung	
4XXX	GD4021B	‡ GoldStar			CD74HCT165	* Harris		Cell	SN74166	TI	
	CD4021BE	Harris			54HCTLS165	‡ Ideal Semi	(3534)	HC	CD54HC166	† Harris	
	MC14021BC	Motorola	15		74HCTLS165	‡ Ideal Semi	(3534)		CD74HC166	Harris	140
	CD4021A	National							HD74HC166	Hitachi	
	CD4021BC	National			KS74HCTLS165	Samsung	80		MM54HC166	† National	
	CD4021BM	† National			74HCT165	* Signetics			MM74HC166	National	
	HCC4021B	† SGS-Thomson			74HCT166	Signetics			M74HC166	SGS-Thomson	
	HCF4021B	SGS-Thomson	20	8-Bit Parallel with serial protocol channel					SN54HC166	† TI	145
	HEF4021B	Signetics		IDT49FCT818	IDT				SN74HC166	TI	
	TC4021B	Toshiba (3727)							TC74HC166A	Toshiba	
8-Bit Bidirectional Parallel/Serial Input/Output Bus Register				8-Bit Parallel-In/Serial-Out				HCT	CD54HCT166	† Harris	
4XXX	CD4034B	† Harris			NUJ074HC165	‡ NJR			CD74HCT166	Harris	
	CD4034BE	Harris		8-Bit Parallel-In/Serial-Out with Clear					54HCTLS166	‡ Ideal Semi	(3534)
	CD4034B	‡ Micrel		NUJ074HC166	‡ NJR		85		74HCTLS166	‡ Ideal Semi	(3534)
	MC14034BC	Motorola	25	8-Bit Serial In/Parallel Out							150
	CD4034BC	National		AC	CD54AC164	* † Harris			MM54HCT166	† National	
	CD4034BM	† National			CD74AC164	* Harris			MM74HCT166	National	
	HCC4034B	† SGS-Thomson			TC74AC164	Toshiba			KS74HCTLS166	Samsung	
	HCF4034B	SGS-Thomson	30	ACT	CD54ACT164	* † Harris		8-Bit Serial/Parallel-In, Serial-Out Register with Input Latches			
	TC4034B	Toshiba (3727)			CD74ACT164	* Harris		AHCT	KS74AHCT597	Samsung	
8-Bit Bus Interface Register, Three State				AHCT	54AHCT164	‡ Ideal Semi	(3532)	HC	CD54HC597	† Harris	155
AHCT	KS74AHCT825	Samsung			74AHCT164	‡ Ideal Semi	(3532)		CD74HC597	Harris	
	KS74AHCT826	Samsung			KS74AHCT164	Samsung			HD74HC597	Hitachi	
PCT	P54PCT825A	‡ Performance							MC54HC597	† Motorola	
	P54PCT825B	‡ Performance							MC74HC597	Motorola	
	P74PCT825A	‡ Performance	35	C	MM54C164	† National			MM54HC597	† National	160
	P74PCT825B	‡ Performance			MM74C164	National			MM74HC597	National	
8-Bit Bus Interface Register, Three-State				Cell	SN74164-Cell	TI	95		M74HC597	SGS-Thomson	
BCT	SN54BCT29825	† TI		HC	CD54HC164	* † Harris			LR74HC597	Sharp	
	SN54BCT29826	† TI			CD74HC164	* Harris			74HC597	Signetics	165
					HD74HC164	Hitachi			TC74HC597A	Toshiba	
8-Bit Bus Register, Shift and Store					MC54HC164	† Motorola		HCT	CD54HCT597	† Harris	
HC	CD54HC4094	Harris	40		MC74HC164	Motorola	100		CD74HCT597	Harris	
	CD74HC4094	Harris			MM54HC164	† National			74HCT597	Signetics	
	74HC4094	Signetics			MM74HC164	National		8-Bit Serial-In/Parallel-Out			
	TC74HC4094A	Toshiba			M74HC164	SGS-Thomson			NUJ074HC164	‡ NJR	
HCT	CD54HCT4094	† Harris			LR74HC164	Sharp	105	AC	54AC164	† National	170
	CD74HCT4094	Harris			74HC164	* Signetics			74AC164	National	
	74HCT4094	Signetics	45		SN54HC164	† TI		ACT	54ACT164	† National	
4XXX	CD4094B	† Harris			SN74HC164	TI			74ACT164	National	
	CD4094BE	Harris			TC74HC164A	Toshiba		8-Bit Synchronous Parallel In/Serial Out			
	CD4094B	‡ Micrel			US74HC164	Universal	110	HC	HD74HC589	Hitachi	
	MC14094BC	Motorola							MC54HC589	† Motorola	175
	HCC4094B	† SGS-Thomson							MC74HC589	Motorola	
	HCF4094B	* SGS-Thomson							MM54HC589	† National	
	HEF4094B	Signetics							MM74HC589	National	
	TC4094B	Toshiba (3727)		HCT	CD54HCT164	* † Harris		4XXX	CD4014B	‡ Harris	180
					CD74HCT164	* Harris			CD4014BE	Harris	
					54HCTLS164	‡ Ideal Semi	(3534)		CD4014A	‡ Micrel	
					74HCTLS164	‡ Ideal Semi	(3534)		CD4014B	‡ Micrel	
8-Bit Parallel In/Serial Out									MC14014BC	Motorola	
AC	TC74AC166	Toshiba	55		MM54HCT164	† National	115		CD4014A	National	
AHCT	54AHCT165	‡ Ideal Semi			MM74HCT164	National			CD4014B	National	185
		(3532)			KS74HCTLS164	Samsung					
	74AHCT165	‡ Ideal Semi			M74HCT164	SGS-Thomson					
	KS74AHCT165	Samsung			74HCT164	* Signetics					
		(Continued)			TC74HCT164A	Toshiba	120				

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Shift Registers (Cont'd)				8-Bit, Three-State (Cont'd)				64-Bit Static			
8-Bit Synchronous Parallel In/Serial Out				PCT				4XXX			
4XXX				P54PCT299 ♦ Performance				CD4031B † Harris			
				P54PCT299A ♦ Performance				CD4031BE † Harris			
				P74PCT299 ♦ Performance				CD4031A † Micrel			
				P74PCT299A ♦ Performance				CD4031B † Micrel			
								CD4031BC † National			
								CD4031BM † National			
								HCC4031B † SGS-Thomson			
								HCF4031B † SGS-Thomson			
								HEF4031B † Signetics			

DIGITAL-CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Translators (Cont'd)				Data Encryption Processor (DES standard)				Delay Line (5 taps: 50,100,150,200 and 250 ns)			
Hex Level Shifter (low-to-high voltage)				CA20C03A	Newbridge	(3593)	35	DS1000-250	◊ Dallas	(3439)	
5XXX TC50208 Toshiba (3727)				Delay Line, Programmable 8-Bit (0.25 ns steps)	DS1020-025	◊ Dallas (3439)		Delay Line, Programmable 8-Bit (1 ns steps)	DS1020-100	◊ Dallas (3439)	75
Octal Bidirectional Level Shifter (CMOS/TTL)				Delay Line, Programmable 8-Bit (0.50 ns steps)	DS1020-050	◊ Dallas (3439)		Digital Scan Register			
4XXX HS3374RH ‡ Harris				Delay Line, Programmable 8-Bit (2 ns steps)	DS1020-200	◊ Dallas (3439)		PCT P29PCT818 ◊ ‡ Performance			
CD40116D Harris				Delay Line (three independent 10 nanosecond delays)	DS1013-10	◊ Dallas (3439)		P29PCT818A ◊ ‡ Performance			
8-Bit Bidirectional CMOS/TTL Interface Level Converter				Delay Line (three independent 100 nanosecond delays)	DS1013-100	◊ Dallas (3439)	40	P29PCT818B ◊ ‡ Performance			
4XXX CD40116E † Harris				Delay Line (three independent 15 nanosecond delays)	DS1013-15	◊ Dallas (3439)		Digital Address Register File (DARF) (for VMEBUS interface)			
Miscellaneous				Delay Line (three independent 20 nanosecond delays)	DS1013-20	◊ Dallas (3439)		CMOS CA91C015DARF † Newbridge			
Microprocessor, 1-Bit, Industrial Control Unit				Delay Line (three independent 25 nanosecond delays)	DS1013-25	◊ Dallas (3439)		Digital Audio Companding Processor (Voice and Audio Compression/Expansion)			
4XXX MC14500B Motorola			5	Delay Line (three independent 30 nanosecond delays)	DS1013-30	◊ Dallas (3439)		CMOS ca16c001 Newbridge			80
Addressable Asynchronous Receiver/Transmitter				Delay Line (three independent 40 nanosecond delays)	DS1013-40	◊ Dallas (3439)	45	Digital Audio Interface Transmitter			
4XXX MC14469 ◊ Motorola				Delay Line (three independent 50 nanosecond delays)	DS1013-50	Dallas (3439)		CS8401 ◊ Crystal			
Advanced System Architecture Control Circuit (ACC) for VMEBUS interface				Delay Line (three independent 60 nanosecond delays)	DS1013-60	◊ Dallas (3439)		CS8402 ◊ Crystal			
CMOS CA91C014ACC † Newbridge				Delay Line (three independent 70 nanosecond delays)	DS1013-70	◊ Dallas (3439)		CS8411 ◊ Crystal			
Analog Multiplexer/Demultiplexer (dual 4-channel)				Delay Line (three independent 80 nanosecond delays)	DS1013-80	◊ Dallas (3439)		CS8412 ◊ Crystal			
HC TC74HC4052A Toshiba				Delay Line (three independent 90 nanosecond delays)	DS1013-90	◊ Dallas (3439)	50	Digital Frequency Synthesizer			
Analog Multiplexer/Demultiplexer (triple 2-channel)				Delay Line (5 taps: 10,20,30,40 and 50 ns)	DS1005-50	◊ Dallas (3439)		CMOS CA89C440 Newbridge			85
HC TC74HC4053A Toshiba				Delay Line (5 taps: 12,24,36,48 and 60 ns)	DS1005-60	◊ Dallas (3439)		Digital Mixer (two 12-bit multipliers, an adder and a cascaded accumulator)			
Analog Multiplexer/Demultiplexer (8-channel)				Delay line, 8-Bit Programmable (0.25 ns steps)	DS1020-25	Dallas (3439)		TMC2249 TRWLSI			
HC TC74HC4051A Toshiba			10	Delay Line, 8-Bit Programmable (0.5 ns steps)	DS1020-50	Dallas (3439)		Direct Digital Synthesizer (AKA numerically controlled oscillator, 50 MHz sampling rate)			
Analog Switch, 1xSPST				Delay Line 2-in-1 (independent delays to outputs)	DS1012-1	◊ Dallas (3439)		Q2334C-50	Quaicom		
BU4S66 ROHM				Delay Line 2-in-1 (independent delays to outputs)	DS1012-2	◊ Dallas (3439)		Q2334I-20	Quaicom		
ARINC 629 Terminal Device (30 MHz)				Delay Line 2-in-1 (independent delays to outputs)	DS1012-3	◊ Dallas (3439)		Direction Discriminator			
L63500A0GC-30 LSI Logic				Delay Line 2-in-1 (independent delays to outputs)	DS1012-4	◊ Dallas (3439)		HCT THCT2000 TI			
L63500A0GM-30 † LSI Logic				Delay Line 2-in-1 (independent delays to outputs)	DS1012-5	◊ Dallas (3439)		Error Correction Code (ECC), Corrects 3 Errors and Detects 4 Errors			
Bit Rate Generator				Delay Line (5 taps: 100,200,300,400 and 500 ns)	DS1000-500	◊ Dallas (3439)	25	SRT24-12-03 ◊ ‡ SpaceResearch			90
4XXX HD4702 Harris				Delay Line (5 taps: 10,20,30,40 and 50 ns)	DS1000-50	◊ Dallas (3439)		Error Detection and Circuit, 32-Bit (30ns)			
MC14411 Motorola			15	Delay Line (5 taps: 12,24,36,48 and 60 ns)	DS1000-60	◊ Dallas (3439)		AM29C660BC ◊ AMD			
F4702BC National				Delay Line (5 taps: 15,30,45,60 and 75 ns)	DS1000-75	◊ Dallas (3439)		Error Detection and Correction Circuit, 32-Bit (36ns)			
F4702BM † National				Delay Line (5 taps: 20,40,60,80 and 100 ns)	DS1000-100	◊ Dallas (3439)		AM29C660AC ◊ AMD			
Bus Interface Latch				Delay Line (5 taps: 25,50,75,100 and 125 ns)	DS1000-125	◊ Dallas (3439)	30	Error Detection and Correction Circuit, 32-Bit (24ns)			
FCT IDT54FCT843A ◊ † IDT				Delay Line (5 taps: 30,60,90,120 and 150 ns)	DS1000-150	◊ Dallas (3439)		AM29C660CC ◊ AMD			
IDT74FCT843A ◊ IDT				Delay Line (5 taps: 35,70,105,140 and 175 ns)	DS1000-175	◊ Dallas (3439)		AM29C660DC ◊ AMD			
Bus Multiplexer, Tri-Port (10-bit x 3-port)				Delay Line (5 taps: 40,80,120,160 and 200 ns)	DS1000-200	◊ Dallas (3439)	70	AM29C660EC ◊ AMD			95
FCT IDT49FCT804 IDT								Error Detection and Correction Unit, 32-Bit			
IDT49FCT804A IDT								C IDT49C465 IDT			
Code Identification System								Error Detection/Correction Unit, 32-Bit			
CT15530 GEC Plessey								PCT P54PCT632U † Performance			
Color Space Converter								P54PCT633U † Performance			
BT281 Brooktree								P54PCT634U † Performance			
Comparator, Linear, Quad								P54PCT635U † Performance			
C MM54C909 † National								P74PCT632U Performance			
MM74C909 National								P74PCT633U Performance			
Comparator Phase								P74PCT634U Performance			
C MM74C932 National								P74PCT635U Performance			
Comparator, Dual with Dual Op Amp								FFT Processor Chipset (30 MHz)			
4XXX MC14574 Motorola								L64281-30 LSI Logic (3570)			105
Comparator, Quad								Filter, Digital PLL (Phase-Locked Loop)			
4XXX MC14575 Motorola								HC 74HC297 Signetics			
Controller, 16-Bit Programmable								HCT 74HCT297 * Signetics			
ACT SN74ACT29116 * TI								Floating Point Multiplier (32/34-bit)			
Converter (converts 2-wire serial port to 3-wire serial port)								TMC3201 TRWLSI			
DS1209S-B1 ◊ Dallas								Forward Error Correction Circuit (FEC), implements MIL-STD-188-144A and Fed. Std. 1045 ALE Functions			
Convolutional Encoder/Viterbi Decoder								SRT-141A/1045			
CMOS STEL2030 † STEL								◊ † SpaceResearch			
Coordinate Transformer								Golay Encoder/Decoder with Programmable Interleaving			
TMC2330 TRWLSI								SRT-2412INT SpaceResearch			110
D/A Converter, 8-Bit, 165 MSPS								HSYNC GenLock Controller			
HDAC10180B † Signal Proc								CMOS BT261 Brooktree			
Data Address Register File, 64-Bit (for VMEbus 64 interface)								Latchable Transceiver, 9-Bit with Parity Generator/Checker			
CA91C064 Newbridge (3593)								AC 54AC899 ◊ † National			
								74AC899 ◊ National			
								ACT 54ACT899 ◊ † National			
								74ACT899 ◊ National			115

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line			
Miscellaneous (Cont'd)				Phase-Locked Loop (Cont'd)				Rate Multiplier, BCD						
Latched Transceiver, 9-Bit with Parity Generator/Checker (Cont'd)				HC				4XXX						
FCT	54FCT899A	◊† National	5	74HC4046A	Signetics	45	100	CD4527B	† Harris	105	100			
	74FCT899A	◊ National		74HC7046A	Signetics			CD4527BE	Harris					
Latched Transceiver				HCT	CD54HCT297	*† Harris		MC14527BC	Motorola					
AC	74AC11853	TI			CD54HCT4046	† Harris		CD4527BC	National					
	74AC11854	TI			CD74HCT297	* Harris		CD4527BM	† National					
ACT	74ACT11853	TI	10		CD74HCT4046	Harris	50	HCC4527B	† SGS-Thomson	110	105			
	74ACT11854	TI			74HCT4046A	Signetics		HCF4527B	SGS-Thomson					
Logarithmic Gain/Attenuator (serial interface)					74HCT7046A	Signetics		HEF4527B	Signetics					
ML204		MicroLinear		4XXX	CD4046B	† Harris		TC4527B	Toshiba (3727)					
Matrix Multiplier	TMC2250	TRWLSI			CD4046BE	Harris	55	Reed-Solomon Error Correcting Codec (30 MHz)						
Microsequencer 16-Bit					CD4046B	† Micrel		L64710-30						
ACT	SN74ACT8818A	* TI	15		MC14046BC	Motorola		Register File, 4x4, Three-State						
Modulated Numerically Controlled Oscillator (60 MHz, 32-bit frequency resolution, 12-bit sine or cosine output)					CD4046BC	National		HC	GD74HC670	GoldStar	115			
	STEL1175	STEL (3705)			CD4046BM	† National			HD74HC670	Hitachi				
Monostable Multivibrator with Schmitt Trigger Inputs					HCC4046B	† SGS-Thomson	60	Register, 8-Bit Multiplexed (with I/O readback)						
AHCT	54AHCT121	◊† Ideal Semi		Phase-Locked Loop w/VCO				ACT	74ACT11979	TI				
	74AHCT121	◊† Ideal Semi		HC	CD54HC4046A	† Harris		Register, 8x9-Bit Multiplexed (with I/O readback)						
					CD54HC7046A	† Harris		ACT	74ACT11987	TI	120			
	KS74AHCT121	Samsung			CD74HC4046A	Harris			74ACT11988	TI				
Monostable Multivibrator, Dual					CD74HCT7046A	Harris	65	Registered Transceiver						
4XXX	CD4538B	Harris	20		MC74HC4046A	Motorola		AC	74AC11833	TI				
Monostable Multivibrators with Schmitt Trigger Inputs					CD74HCT7046A	Harris			74AC11834	TI				
HCTLS	54HCTLS121	◊† Ideal Semi		Pipeline Register				ACT	74ACT11833	TI				
	74HCTLS121	◊† Ideal Semi		AC	74AC11818	TI	70		74ACT11834	TI				
				74AC11819	TI	Shift Register, Variable Length								
	KS74HCTLS121	Samsung	ACT	74ACT11818	TI			TMC2011	TRWLSI	125				
Multifunction Circuit, 6-Section					74ACT11819	TI		Successive Approximation Register						
HC	SN74HC7008	TI	BCT	SN54BCT29818	† TI	C		MM54C905	† Micrel					
Multilevel Pipeline Register				PLL Frequency Synthesizer (parallel input)					MM54C905		† National			
LPR520C	◊† LogicDev	30	20	PLL Frequency Synthesizer (4-bit data bus input)		75	130		MM74C905		National			
LPR520M	◊† LogicDev			Priority Encoder, 8-to-3 Line				Successive Approximation Register, Cascadable						
LPR521C	◊† LogicDev			HCT	MM54HCT148	† National		4XXX	MC14549BC		Motorola			
LPR521M	◊† LogicDev				MM74HCT148	National		Switch Eliminator (logic to replace manual digital switches)						
L29C520C	◊† LogicDev			Priority Encoder, 10-to-4 Line				DS1223	Dallas	135	125			
L29C520M	◊† LogicDev	35		HCT	MM54HCT147	† National	80	DS1290	Dallas					
L29C521C	◊† LogicDev				MM74HCT147	National		DS1291	Dallas					
L29C521M	◊† LogicDev			Programmable Delay Timer with Oscillator				DS1292	Dallas					
				HC	74HC5555	Signetics (3656)		DS1293	Dallas					
Numerically Controlled Oscillator (Dual NCO)				HCT	74HCT5555	Signetics (3656)	85	Terminator, Dual Programmable 4-Bit						
CMOS	STEL1178	◊† STEL	40	Programmable Digital Delay Timer		30		4XXX	TC40117B	Toshiba (3727)	140			
Numerically Controlled Oscillator (50 MHz, 16-bit frequency resolution, 12-bit sine or cosine output)				Programmable Frequency Divider/Digital Timer				Testable Functional Circuit (provides the circuit functionality of various logic devices: multiplexers, decoders, shift registers, addressable latches; TC ± driver, TV ± receiver)						
	STEL1174	STEL (3705)		HC	74HC5555	Signetics (3656)		LT54TC32	◊† LSTI					
Numerically Controlled Oscillator (50 MHz, 32-bit frequency resolution, 8-bit sine and cosine output or 12-bit phase output)				HCT	74HCT5555	Signetics (3656)		LT54TV32	◊† LSTI					
	STEL1172B	STEL (3705)		Programmable Frequency Dividers/Timers		90		LT74TC32	◊ LSTI					
Numerically Controlled Oscillator (50 MHz, 48-bit frequency resolution, 12-bit sine or cosine output)				HC	HD74HC292	Hitachi	95	LT74TV32	◊ LSTI					
	STEL1173	STEL (3705)	45		HD74HC294	Hitachi		Timekeeper, Internal Lithium Source						
	STEL1173RH	± STEL			TC74HC7292A	Toshiba		DS1216E	Dallas	145	135			
Op Amp, Linear, Quad	4XXX	MC14573			TC74HC7294A	Toshiba		Timer						
PC Mouse Controller	5720	Commodore		HC	HC74HC292	Hitachi		5XXX	TC5043	Toshiba (3727)				
Phase Lock Device (internal dividers from 1/2 to 1/16 of the input clock frequency)					HD74HC294	Hitachi	95	Timer/Divider, Programmable						
CMOS	KS6369-20	Cornes USA		TC74HC7292A	Toshiba	HC		TC74HC7292	Toshiba					
Phase-Locked Loop					TC74HC7294A	Toshiba			TC74HC7294	Toshiba				
HC	CD54HC297	*† Harris	Programmable Timer		55			Timer, 6-Bit Universal, to "595999"						
	CD54HC4046	† Harris	HC	HCF4536B	SGS-Thomson	5XXX		TC5072	Toshiba (3727)					
	CD74HC297	* Harris	Programmable Video Sync Generator					Timer, 6-Bit Universal, to "995959"						
	CD74HC4046	Harris	ACT	54ACT715	† National	60	5XXX	TC5071	Toshiba (3727)					
	MC54HC4046A	◊† Motorola	55		74ACT715		National	Timer, 6-Digit Universal						
	MM54HC4046	† National		Rate Multiplier, Binary			65		5XXX	TC5070	Toshiba (3727)	145		
	MM74HC4046	National		4XXX	CD4089B		† Harris		TC5071	Toshiba (3727)				
					CD4089BE		Harris		TC5072	Toshiba (3727)				
					CD4089BC		National	Touch Switch						
					CD4089BM		† National		TC9130	Toshiba				
					HCC4089B	† SGS-Thomson	70		TC9135	Toshiba				
					HCF4089B	SGS-Thomson		T1, Digital T1 Transceiver						
									CS2180B	◊ Crystal				

† Mil Temp Range (-55° to 125°C)

± High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Quad 2-Input NAND Schmitt Trigger (Cont'd)				Octal Register Transceiver			
Video Data Compression and Expansion Controller TC35190 Toshiba				4XXX CD4093BC National CD4093BM † National HCC4093B † SGS-Thomson HCF4093B † SGS-Thomson HEF4093B Signetics TC4093B Toshiba (3727)				PCT 29PCT52A † Performance 29PCT52B † Performance 29PCT53A † Performance 29PCT53B † Performance			
Video Shift Register, High Speed (30 MHz) L64212-30 LSI Logic (3570)								Octal Registers with Readback HCTLS KS74HCTLS794 Samsung			
Video Shift Register, High Speed (40 MHz) L64212-40 LSI Logic (3570)								Three Port Register File (16 words x 9-bits) TMC3200 TRWLSI			
Single Chip Transceiver (provides AES/EBU ansi s4.40 interface for Digital Audio Data) CMOS CA16C440 Newbridge (3593)				Quad 2-Port Registers HCTLS 54HCTLS399 † Ideal Semi (3534) 74HCTLS399 † Ideal Semi (3534) KS74HCTLS399 Samsung				3-/4-Input NAND/NOR Combination HC SN74HC7006 TI			
Dual D-Type Flip-Flop, 2-Input NAND/NOR Combination HC SN74HC7074 TI				Quad 2-Input NAND Schmitt Trigger AC 74AC11132 TI ACT 74ACT11132 TI				4-Bit Binary Counter/Clock Generator 5XXX TC5018B Toshiba			
Dual Differential Line Driver MM78C30 † Micrel MM78C30 † National MM88C30 National				Quadrature Amplitude Modulator CMOS STEL1130 † STEL				4x4x2 Crosspoint Switch M22101 SGS-Thomson M22102 SGS-Thomson			
Dual Retriggerable Monostable Multivibrators HCTLS 54HCTLS123 † Ideal Semi (3534) 74HCTLS123 † Ideal Semi (3534) KS74HCTLS123 Samsung KS74HCTLS423 Samsung				Hex Contact Bounce Eliminator 4XXX MC14490 Motorola				6-Section Multifunction (Inverter, NOR, Flip-Flop) SN74HC7076 TI			
Dual Schmitt Trigger AC 74AC11013 TI ACT 74ACT11013 TI 4XXX MC14583BC Motorola TC4583B Toshiba (3727)				Hex Inverting Logic Level Down Converter HCTLS KS74HCTLS4049 Samsung				6-Section Multifunction (NAND, Invert, Flip-Flop) SN74HC7075 TI			
Dual 4-Bit Terminator 4XXX CD40117B Harris				Hex Inverting Logic Level Down Converters AHCT KS74AHCT4049 Samsung				8-Bit Diagnostic/Pipe-Line Register AC 74AC11818 Signetics ACT 74ACT11818 Signetics			
Dual 4-Channel Analog Multiplexer/Demultiplexer HC 74HC4052 Signetics HCT 74HCT4052 Signetics				Hex Logic Level Down Converter HCTLS KS74HCTLS4050 Samsung				8-Bit Diagnostic/Pipe-Line Register w/Parity Even Output AC 74AC11819 Signetics ACT 74ACT11819 Signetics			
Dual 4-Input NAND Schmitt Trigger AHCT KS74AHCT13 Samsung				Hex Logic Level Down Converters AHCT KS74AHCT4050 Samsung				8-Bit Diagnostic Pipeline Register ACT 54ACT818 † National 74ACT818 National			
Triple 2-Channel Analog Multiplexer/Demultiplexer HC 74HC4053 Signetics HCT 74HCT4053 Signetics				Hex Schmitt Trigger TC584B Toshiba AC 54AC14 † National 74AC14 National ACT 54ACT14 † National 74ACT14 National C MM54C14 † Micrel MM54C914 † Micrel MM54C14 † National MM54C914 † National MM74C14 National MM74C914 National				8-Bit I/O Port CDP1852C † Harris CDP1872C † Harris CDP1874C † Harris CDP1875C † Harris HB1852 † Hughes HB1852C † Hughes 1852 Micro-C HC HC1852 † Hughes HC1852C † Hughes			
Quad Bilateral Switch 4XXX NJU74HC4066 † NJR CD4016AE † Harris				HC CD54HC14 † Harris CD74HC14 † Harris HD74HC14 Hitachi M74HC14 SGS-Thomson LR74HC14 Sharp 74HC14 † Signetics SN54HC14 † TI SN74HC14 TI				8-Bit Metastable-Resistant Flip-Flops AC 74AC11476 TI 74AC11477 TI 74AC11478 TI ACT 74ACT11476 TI 74ACT11477 TI 74ACT11478 TI			
Quad Precision Timer/Driver (inputs cause outputs to switch state for 100 clock pulses) 4XXX MC14415 Motorola MC14415E † Motorola				HCT CD54HCT14 † Harris CD74HCT14 † Harris 74HCT14 † Signetics				8-Bit Priority Encoder 4XXX CD4532B † Harris CD4532BE Harris MC14532BC Motorola HCC4532B † SGS-Thomson HCF4532B SGS-Thomson HEF4532B Signetics TC4532B Toshiba (3727)			
Quad Single Ended Line Driver MM78C29 † Micrel MM78C29 † National MM88C29 National				4XXX CD40106B † Harris CD40106BE Harris CD40106B † Micrel CD4584B † Micrel MC14584BC Motorola CD40106BC National CD40106BM † National CD4584BC National CD4584BM † National HCC40106B † SGS-Thomson HCF40106B † SGS-Thomson HEF40106B Signetics TC4584B Toshiba (3727)				8-Bit Transceiver with Parity FCT IDT54FCT833A † IDT IDT54FCT833B † IDT IDT54FCT853A † IDT IDT54FCT853B † IDT IDT74FCT833A IDT IDT74FCT833B IDT IDT74FCT853A IDT IDT74FCT853B IDT IDT74FCT854A IDT IDT74FCT854B IDT			
Quad 2-Input NAND Schmitt Trigger HC CD54HC132 † Harris CD74HC132 Harris HD74HC132 Hitachi MC54HC132A † Motorola MC74HC132A Motorola MM54HC132 † National MM74HC132 National M74HC132 SGS-Thomson LR74HC132 Sharp 74HC132 Signetics SN54HC132 † TI SN74HC132 TI TC74HC132A Toshiba				Hex Schmitt Trigger Inverter AC 74AC11014 TI ACT 74ACT11014 TI HC MC54HC14A † Motorola MC74HC14A † Motorola MM54HC14 † National MM74HC14 National				PCT P54PCT853A † Performance P54PCT853B † Performance			
HCT CD54HCT132 † Harris CD74HCT132 Harris KS74HCTLS132 Samsung 74HCT132 Signetics				HCT MC54HCT14A † Motorola MC74HCT14A Motorola				8-Bit Universal Transceiver/Port Controller ACT 74ACT11877 TI			
4XXX GD4093B † GoldStar CD4093B † Harris CD4093BE † Harris CD4093B † Micrel MC14093BC Motorola				HCT MC54HCT14A † Motorola MC74HCT14A Motorola				8-Bit Universal Transceiver/Port Controllers AC 74AC11852 TI 74AC11856 TI 74AC11877 TI			

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

⚡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—CMOS (Cont'd)

Function	Device	Source	Line
Miscellaneous (Cont'd)			
8-Channel Analog Multiplexer/Demultiplexer			
HC	74HC4051	Signetics	
HCT	74HCT4051	Signetics	
8-Line to 3-Line Priority Encoder			
HC	MM54HC148	† National	
	MM74HC148	National	
9-Bit Odd/Even Parity Generator/Checker			
AC	74AC11280	* TI	5
AHCT	KS74AHCT280	Samsung	
HC	LR74HC280	Sharp	
	SN54HC180	† TI	
	SN54HC280	† TI	
	SN74HC180	TI	10
	SN74HC280	TI	
	TC74HC280A	Toshiba	
9-Bit Parity Generator/Checker with Parity I/O Port			
AC	74AC11286	* TI	
10-Line to 4-Line DCD Priority Encoder			
HC	TC74HC147A	Toshiba	
4XXX	CD40147B	† Harris	15
	CD40147BE	Harris	
12-Bit Parity Tree			
4XXX	MC14531BC	Motorola	
	HEF4531B	Signetics	
	TC4531B	Toshiba (3727)	
16-Bit Stereo A/D Converter			
CMOS	CS5336	◊ Crystal	20
	CS5537	◊ Crystal	
	CS5538	◊ Crystal	
	CS5539	◊ Crystal	
18-Bit Stereo D/A Converter			
CMOS	CS4328	◊ Crystal	

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—BiCMOS

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Arithmetic Functions				MCP Address/Data Transceivers				Octal Registered Bus Transceiver				
Diagnostic/Pipeline Register BCT	SN54BCT818	† TI	5	BCT	SN74BCT2425	* TI	50	BCT	SN74BCT646	TI	95	
	SN54BCT819	† TI		NuBus Address/Data Transceivers and Registers BCT	SN74BCT2420	* TI		SN74BCT652	TI			
	SN74BCT818	TI		PI-Bus Transceiver, Octal (wired-OR Bus) DS1776	♦ National	Octal Registered Transceiver FCT		54FCT543A	♦† National			
	SN74BCT819	TI				74FCT543A		♦ National				
9-Bit Parity Checker AC TC74C280 ♦ Toshiba				Transceiver/Register, True, Three-State 74ABT652 Signetics (3646)				Octal Registered Transceiver, Inverting, Three-State 74ABT2953 Signetics (3648)				
Buffers				Quad Bus Transceiver				Octal Registered Transceiver, Three-State 74ABT2952 Signetics				
Buffer/Line Driver, Octal, Open Collector BCT	SN54BCT756	† TI	10	BC	TD74BC242	Toshiba	55	Octal Transceiver, Non-Inverting, Three-State 74ABT623 Signetics (3645)				
	SN54BCT757	† TI		TD74BC243	Toshiba	Octal Transceiver with Direction Pin, Inverting, Three-State 74ABT640 Signetics		100				
	SN54BCT760	† TI		Hex Bus Buffer, Three-State, Inverting BC	MC74BC366	Motorola						Octal Transceiver with Directional Pin, Three-State 74ABT245 Signetics (3640)
	SN74BCT756	TI		MC74BC368	Motorola	Octal Transceiver with Dual Enable, Inverting, Three-State 74ABT620 Signetics						
	SN74BCT757	TI		Hex Bus Buffer, Three-State, Non-Inverting BC	MC74BC365	Motorola	Octal Transceiver with Dual Enable, True, Three-State MB2623 Signetics (3660)					
	SN74BCT760	TI		MC74BC367	Motorola	Octal Transceiver with 8-Bit Parity Generator/Checker, Three-State 74ABT657 Signetics						
Buffer/Line Driver, 16-Bit, Three-State MB2241 Signetics (3657)				Octal Bidirectional Transceiver, Three-State FCT 54FCT245A ♦† National 74FCT245A ♦ National				9-Bit Bus Transceiver, Three-State, Inverting FCT CD54FCT863A † Harris CD74FCT863A Harris				
Bus Buffer/Line Driver (with parity checker/generator) BCT				15	Octal Buffer/Line Driver, Three State, Inverting FCT 54FCT240A ♦† National	60	Octal Transceiver with 8-Bit Parity Generator/Checker, Three-State 74ABT657 Signetics	9-Bit Bus Transceiver, Three-State, Inverting FCT CD54FCT864A † Harris CD74FCT864A Harris				
SN54BCT563	† TI	Octal Buffer/Line Driver, Three-State, Inverting FCT 74FCT240A ♦ National	9-Bit Bus Transceiver, Three-State, Inverting FCT CD54FCT864A † Harris CD74FCT864A Harris									
SN54BCT564	† TI	Octal Buffer/Line Driver, Three-State, Non-Inverting FCT 54FCT241 ♦† National	10-Bit Bus Interface Latch, Three-State 74ABT841 Signetics									
SN74BCT563	TI	54FCT241A ♦† National	10-Bit Bus Transceiver, Three-State FCT CD54FCT861A † Harris CD74FCT861A Harris									
SN74BCT564	TI	54FCT244 ♦† National	10-Bit Bus Transceiver, Three-State, Inverting FCT CD54FCT862A † Harris CD74FCT862A Harris									
Bus Buffers, Quad, Three-State BCT				20	54FCT244A ♦† National	65	16-Bit Buffer/Line Driver, Three-State, Inverting MB2244 ♦ Signetics	16-Bit Buffer/Line Driver, Three-State, Inverting MB2244 ♦ Signetics				
SN54BCT125	*† TI	74FCT241 ♦ National	16-Bit Bus Transceiver, Three-State, Non-Inverting MB2245 ♦ Signetics (3658)									
SN54BCT126	*† TI	74FCT241A ♦ National	16-Bit Multiplexed Bus Transceiver with Latches BCT SN74BCT2423 * TI SN74BCT2424 * TI									
SN74BCT125	* TI	74FCT244 ♦ National	10-Bit Bus Transceiver; 3-State FCT FCT861A Harris									
SN74BCT126	* TI	74FCT244 ♦ National	70	Octal Bus Buffer, Three-State, Inverting BC MC74BC540 Motorola	10-Bit Bus Transceiver; 3-State; Inverting FCT FCT862A Harris	9-Bit Bus Transceiver; 3-State FCT FCT863A Harris	9-Bit Bus Transceiver; 3-State; Inverting FCT FCT864A Harris	Decoders 3-Line to 8-Line Memory Decoder with Battery Backup BCT SN74BCT2414 TI				
Hex Bus Buffer BC				25	TD74BC365 Toshiba	75	Drivers Octal Bus Driver BC TD74BC230 Toshiba TD74BC231 Toshiba					
TD74BC367 Toshiba	Octal Buffer/Line Driver BCT	SN54BCT541 ♦† TI	10-Bit Bus Transceiver; 3-State; Inverting FCT FCT862A Harris									
TD74BC368 Toshiba	Octal Buffer/Line Driver with Parity Checker/Generator BCT	SN54BCT455 † TI SN54BCT456 † TI SN74BCT455 TI SN74BCT456 TI	9-Bit Bus Transceiver; 3-State FCT FCT863A Harris									
Octal Buffer/Line Driver, Dual, Three-State MB2541 Signetics (3659)	Octal Buffer/Line Driver, Three-State 74ABT241 Signetics (3640) 74ABT244 Signetics 74ABT541 Signetics (3643)	BCT SN74BCT541 * TI	9-Bit Bus Transceiver; 3-State; Inverting FCT FCT864A Harris									
Octal Buffer/Line Driver, Three-State, Inverting BCT				30	54BCT2240 ♦† National	80	Octal 25-Ohm Line Driver, Inverting, Three-State BCT SN54BCT25240 † TI SN74BCT25240 TI					
54BCT240 ♦† National	Octal Buffer/Line Driver, Three-State, Inverting BCT	54BCT240 ♦† National	Octal Bus Transceiver; 3-State FCT FCT654 Harris									
74BCT2240 ♦ National	Octal Buffer/Line Driver, Three-State, Inverting BCT	74BCT2240 ♦ National	Octal Bus Transceiver/Register, Three-State 74ABT646 Signetics (3645)									
74BCT240 ♦ National	Octal Buffer/Line Driver, Three-State, Inverting BCT	74BCT240 ♦ National	FCT CD54FCT654 † Harris CD74FCT654 Harris									
Octal Bus Buffer BC				40	TD74BC241 Toshiba	85	Octal 25-Ohm Line Driver, Non-Inverting, Three-State BCT SN54BCT25241 † TI SN54BCT25244 † TI SN74BCT25241 TI SN74BCT25244 TI					
TD74BC244 Toshiba	Octal Bus Buffer, Inverting BC	TD74BC240 Toshiba	Octal Bus Transceiver, Three-State FCT CD54FCT7623 † Harris CD74FCT7623 Harris									
TD74BC540 ♦ Toshiba	10-Bit Buffer/Line Driver, Non-Inverting, Three-State 74ABT827 Signetics		Octal Bus Transceiver, Three-State, Inverting BC MC74BC242 Motorola MC74BC243 Motorola									
TD74BC541 ♦ Toshiba	11-Bit BCT	SN74BCT2412 TI SN74BCT2413 TI	Octal Latched Transceiver with Dual Enable, Inverting 74ABT544 Signetics (3643)									
Octal Bus Buffer, Inverting BC				45	TD74BC240 Toshiba	90						
10-Bit Buffer/Line Driver, Non-Inverting, Three-State 74ABT827 Signetics	11-Bit with Series Resistor BCT	SN74BCT2410 TI SN74BCT2411 TI	Octal Register-Transceiver; 3-State FCT FCT2952A Harris									
			Octal Register-Transceiver; 3-State; Inverting FCT FCT2953A Harris									
			Octal Register-Transceiver, Three-State FCT CD54FCT2952A † Harris CD74FCT2952A Harris									
Bus-Oriented Circuits					Octal Register-Transceiver, Three-State, Inverting FCT CD54FCT2953A † Harris CD74FCT2953A Harris							
Bus Transceiver, 9-Bit, Three-State 74ABT863 Signetics (3647)												

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—BiCMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Drivers (Cont'd)				Gates, OR				10-Bit Transparent, Three-State FCT CD74FCT841A Harris					
Octal 25-Ohm Line Driver, Open Collector BCT	SN54BCT25756 † TI SN54BCT25757 † TI SN54BCT25760 † TI SN74BCT25756 TI SN74BCT25757 TI SN74BCT25760 TI		5	Quad 2-Input BC	MC74BC32 Motorola TD74BC32 Toshiba		50	10-Bit Transparent, Three-State, Inverting FCT	CD54FCT842A † Harris CD74FCT842A Harris		100		
Flip-Flops, D-Type				Gates, Miscellaneous				10-Bit Transparent Latch; 3-State FCT	FCT841A Harris				
2-Bit Clock Driver BCT	SN74BCT306 TI			8-Bit Bidirectional with Handshake BCT	SN74BCT2952 TI SN74BCT2953 TI			10-Bit Transparent Latch; 3-State; Inverting FCT	FCT842A Harris				
Latches				Octal D-Type, Transparent, Three-State 74ABT373 Signetics (3641)		10-Bit Transparent, Three-State FCT		CD54FCT841A † Harris					
Octal BC	TD74BC564 † Toshiba TD74BC574 † Toshiba TD74BC575 † Toshiba			BCT	SN54BCT573 † TI SN74BCT573 TI			9-Bit Transparent FCT	CD74FCT844A Harris				
Octal D-Type, Edge-Triggered BCT	SN54BCT574 † TI SN74BCT574 TI		Octal D-Type, Three-State 74ABT573 Signetics (3644)			9-Bit Transparent Latch; 3-State FCT		FCT843A Harris					
Octal D-Type, Three-State BC	TD74BC374 Toshiba TD74BC534 Toshiba		Octal D-Type, Three-State, Inverting BC	MC74BC533 Motorola MC74BC563 Motorola TD74BC533 Toshiba		9-Bit Transparent Latch; 3-State; Inverting FCT	FCT844A Harris						
Octal D-Type, Three-State, Inverting BC	MC74BC534 Motorola		Octal D-Type, Three-State, Non-Inverting BC	MC74BC373 Motorola MC74BC573 Motorola		Shift Registers							
Octal D-Type, Three-State, Non-Inverting BC	MC74BC374 Motorola		Octal Transparent BC	TD74BC563 † Toshiba TD74BC573 † Toshiba		8-Bit Parallel-In, Parallel-Out, Three-State, with Positive Edge-Triggered D-Type Flip-Flops (bus interface) BCT	SN74BCT29825 TI						
Octal, Edge-Triggered			Octal Transparent Latch; 3-State FCT	FCT373 Harris FCT573 Harris		8-Bit Universal Shift/Storage, Three-State BCT	SN54BCT299 † TI SN54BCT323 † TI SN74BCT299 TI SN74BCT323 TI						
FCT	74ABT273 Signetics 54FCT273 † National 54FCT377 † National 74FCT273 † National 74FCT377 † National		Octal Transparent Latch; 3-State; Inverting FCT	FCT533 Harris FCT563 Harris		9-Bit Parallel-In, Parallel-Out, Three-State, with Positive Edge-Triggered D-Type Flip-Flops (bus interface) BCT	SN74BCT29823 * TI						
Octal, Non-Inverting BC	MC74BC575 Motorola		Octal Transparent, Three-State FCT	CD54FCT373 † Harris CD54FCT573 † Harris CD74FCT373 Harris CD74FCT573 Harris		9-Bit Latchable Transceiver with Parity BCT	SN74BCT899 TI						
Octal, Positive-Edge Trigger, Three-State 74ABT374 Signetics				54FCT373A † National 54FCT533A † National 54FCT563 † National 54FCT563A † National 54FCT573 † National 54FCT573A † National 74FCT373 † National 74FCT373A † National 74FCT533A † National 74FCT563 † National 74FCT563A † National 74FCT573 † National 74FCT573A † National		25 Ohm Registered Octal Bus Transceiver BCT	SN74BCT25646 TI SN74BCT25648 TI SN74BCT25651 TI SN74BCT25652 TI						
Octal with Enable 74ABT377 Signetics (3642)			Octal Transparent, Three-State, Inverting FCT	CD54FCT533 † Harris CD54FCT563 † Harris CD74FCT533 Harris CD74FCT563 Harris		Transceivers, Bus							
Octal, Three State FCT	74FCT564A † National		8-Bit, Transparent D-Type, Three-State (bus interface) BCT	SN74BCT29846 TI		Octal Bus Transceiver BC	TD74BC620 Toshiba TD74BC623 Toshiba TD74BC640 Toshiba TD74BC643 Toshiba TD74BC645 Toshiba						
Octal, Three-State FCT	54FCT374 † National 54FCT374A † National 54FCT564 † National 54FCT564A † National 54FCT574 † National 54FCT574A † National 74FCT374 † National 74FCT374A † National 74FCT564 † National 74FCT574 † National 74FCT574A † National		9-Bit, Transparent D-Type, Three-State (bus interface) BCT	SN74BCT29843 TI		9-Bit Parallel-In, Parallel-Out, Three-State, with Positive Edge-Triggered D-Type Flip-Flops (bus interface) BCT	SN74BCT29821 * TI SN74BCT29822 TI						
Octal Three-State, Inverting BC	74ABT534 Signetics MC74BC564 Motorola		9-Bit Transparent, Three-State FCT	CD54FCT843A † Harris CD74FCT843A Harris		10-Bit Parallel-In, Parallel-Out, Three-State, with Positive Edge-Triggered D-Type Flip-Flops (bus interface) BCT	SN74BCT29821 * TI SN74BCT29822 TI						
Octal Three-State, Non-Inverting BC	ABT574 Signetics MC74BC574 Motorola		9-Bit Transparent, Three-State, Inverting FCT	CD54FCT844A † Harris		Miscellaneous							
10-Bit BCT	SN74BCT29821 * TI		10-Bit, Transparent D-Type, Three-State (bus interface) BCT	SN74BCT29841 TI		Bus Receivers, Octal, Three-State BCT	SN54BCT643 † TI						
10-Bit, Positive-Edge Triggered, Three-State 74ABT821 Signetics			Gates, AND				Crossbar Switch, 4x4x20 (8 Gbit/s) SC2001 Silicon Conn						
Gates, AND				Gates, NAND				Cyclic Redundancy Checker, 64-Bit 52023 † AMCC					
Quad 2-Input BC	MC74BC08 Motorola TD74BC08 Toshiba		Gates, OR				Logic Array with Phase-Lock Loop Q24008 † AMCC Q800B AMCC						
Gates, NAND				Gates, OR				Octal Bus Transceiver, Non-Inverting, Three-State BCT	SN74BCT643 TI				
Quad 2-Input BC	MC74BC00 Motorola TD74BC00 Toshiba		Gates, OR				PLL/Prescaler, Single-Chip MB1501 † Fujitsu (3484) MB1502 † Fujitsu MB1504 † Fujitsu MB1505 † Fujitsu MB1507 † Fujitsu (3485) MB1508 † Fujitsu						
Gates, NAND				Gates, OR				(Continued)					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◇ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—BiCMOS (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Octal Bus Transceiver, Three-State, Inverting BC	MC74BC620 MC74BC640	Motorola Motorola	45
PLL/Prescaler, Single-Chip (Cont'd)	MB1509 MB1511	◊ Fujitsu ◊ Fujitsu		Octal Bus Transceiver, Three-State, Inverting/Non-Inverting BC	MC74BC643	Motorola	
Test Device with Octal Bus Driver BCT	SN74BCT8244	° TI		Octal Bus Transceiver, Three-State, Non-Inverting BC	MC74BC623 MC74BC645	Motorola Motorola	
Test Device with Octal Bus Transceiver BCT	SN74BCT8245	° TI		Octal Bus Transceivers, Three-State (A-port has 25-ohm line driver output) BCT	SN74BCT25245	° TI	50
Test Device with Octal D-Type Flip-Flop BCT	SN74BCT8374	° TI	5				
Test Device with Octal D-Type Latch BCT	SN74BCT8383	TI					
Octal Buffer/Line Driver, Inverting, Three-State BCT	SN74BCT540	° TI					
Octal Buffer/Line Driver, Three-State BCT	SN54BCT2240 SN54BCT2244 SN74BCT2240 SN74BCT2241 SN74BCT2244	° TI *† TI ° TI ° TI ° TI	10				
Octal Bus Buffer, Three-State, Inverting BC	MC74BC231 MC74BC240	Motorola Motorola					
Octal Bus Buffer, Three-State, Inverting and Non-Inverting BC	MC74BC230	Motorola	15				
Octal Bus Buffer, Three-State, Non-Inverting BC	MC74BC241 MC74BC244	Motorola Motorola					
Octal Bus Transceiver, Inverting, Three-State BCT	SN74BCT640 SN74BCT642	TI TI					
Octal Bus Transceiver, Inverting, Three-State (A- and B-port has 25-ohm line driver output) BCT	SN54BCT25622 SN54BCT25642 SN74BCT25622 SN74BCT25642	† TI † TI TI TI	20				
Octal Bus Transceiver, Inverting, Three-State (A-port has 25-ohm line driver output) BCT	SN54BCT25640 SN74BCT25640	† TI TI	25				
Octal Bus Transceiver, Latched, Three-State BCT	SN54BCT956 SN54BCT957 SN54BCT958 SN54BCT959 SN74BCT956 SN74BCT957 SN74BCT958 SN74BCT959	† TI † TI † TI † TI TI TI TI TI	30				
Octal Bus Transceiver, Non-Inverting, Three-State (A- and B-port has 25-ohm line driver output) BCT	SN54BCT25621 SN54BCT25623 SN54BCT25641	† TI † TI † TI	35				
Octal Bus Transceiver, Non-Inverting, Three-State BCT	SN54BCT657	† TI					
Octal Bus Transceiver, Non-Inverting, Three-State (A- and B-port has 25-ohm line driver output) BCT	SN74BCT25621 SN74BCT25623 SN74BCT25641	TI TI TI	40				
Octal Bus Transceiver (with 8-bit parity generator/checker) BCT	SN74BCT657	TI					
Octal Bus Transceiver, Three-State (A-port has 25-ohm line driver output) BCT	SN54BCT25245 SN54BCT25620 SN74BCT25620	 *† TI † TI TI					

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—ECL

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
10K Series Arithmetic Functions				Bus-Oriented Circuits				Delay Line Module, 5-Tap (80 to 400 ns) ECLDL400 Technitrol			
Barrel Shifter, 16-Bit Parallel/Serial with 10K Compatible Outputs. TIE10H897 TI				3-Bit Registered Bus Transceiver SY10E336 Synergy (3708)				Delay Line Module, 5-Tap (90 to 450 ns) ECLDL450 Technitrol			
Crosspoint Switch 32x32, (with 1.2 Gbit/s throughput) S2024 † AMCC				3-Bit Scannable Registered Bus Transceiver SY10E337 Synergy (3708)			40	Delay Line Module, 5-Tap (5 to 25 ns) ECLD025 Technitrol			
Fixed Point Multiplier (16x16) B3018A * Bipolar				Counters				Programmable Delay Line CXB1159 Sony			80
Floating Point ALU (SPARC processor family) B5120 Bipolar				8-Bit Ripple MC10E137 * Motorola				CXB1559 Sony			
Floating Point ALU (32/64-bit) B3120A * Bipolar			5	8-Bit Synchronous Count Up MC10E016 * Motorola				Programmable Delay Module (up to 10 ns) ECLPG301 Technitrol			
Floating Point Multiplier/Divider (32/64-bit) B3110A * Bipolar				Counters, Binary				Programmable Delay Module (up to 17 ns) ECLPG302 Technitrol			
Floating Point Multiplier (SPARC processor family) B5110 Bipolar				4 Stage Ripple Counter with Reset MB1814 Fujitsu (3486)				Programmable Delay Module (up to 24 ns) ECLPG303 Technitrol			
Look-Ahead Carry Circuit MC10H179 Motorola				4-Bit MC10H016 * Motorola			45	Programmable Delay Module (up to 31 ns) ECLPG304 Technitrol			85
MC10179 Motorola				MC10154 Motorola				Programmable Delay Module (up to 38 ns) ECLPG305 Technitrol			
10179 Signetics			10	MC10178 Motorola				Programmable Delay Module (up to 45 ns) ECLPG306 Technitrol			
Magnitude Comparator, 9-Bit MC10E166 * Motorola				4-Bit Universal MC10H136 Motorola			50	Programmable Delay Module (up to 52 ns) ECLPG307 Technitrol			
Microsequencer with TTL Compatible Outputs TIE7890A TI				MC10136 * Motorola				Programmable Delay Module (up to 59 ns) ECLPG308 Technitrol			
Microsequencer with 10K Compatible Outputs TIE10H890 TI				10136 Signetics				Programmable Delay Module (up to 66 ns) ECLPG309 Technitrol			
Parity Generator/Checker, 12-Bit MC10E160 * Motorola				8-Bit Synchronous Count Up SY10E016 Synergy (3707)				Programmable Delay Module (up to 73 ns) ECLPG310 Technitrol			90
Dual Analog Comparator MC10E1651 * Motorola			15	Decoders				Programmable Delay Module (up to 108 ns) ECLPG315 Technitrol			
MC10E1652 * Motorola				Binary to 1-8 (high) MC10H162 * Motorola			55	Programmable Delay Module (up to 143 ns) ECLPG320 Technitrol			
Dual High Speed Adder/Subtractor MC10H180 Motorola				MC10162 * Motorola				Programmable Delay Module (up to 178 ns) ECLPG325 Technitrol			
MC10180 Motorola				10162 Signetics				Programmable Delay Module (up to 213 ns) ECLPG330 Technitrol			95
10180 Signetics				Binary to 1-8 (low) MC10H161 Motorola				Programmable Delay Module (up to 248 ns) ECLPG335 Technitrol			
2-Bit Logic Unit/Function Generator MC10182 Motorola			20	MC10161 Motorola				Programmable Delay Module (up to 283 ns) ECLPG340 Technitrol			
4-Bit Logic Unit/Function Generator MC10H181 Motorola				10161 Signetics				Programmable Delay Module (up to 318 ns) ECLPG345 Technitrol			
MC10181 Motorola				Dual Binary to 1-4 (high) MC10H172 Motorola			60	Programmable Delay Module (up to 353 ns) ECLPG350 Technitrol			
10181 Signetics				MC10172 Motorola							
5-Bit Comparator MC10H166 Motorola			25	10172 Signetics							
MC10166 Motorola				Dual Binary to 1-4 (low) MC10H171 Motorola			65				
8-Bit Processor Slices with TTL Compatible Outputs TIE7888 * TI				MC10171 Motorola							
8-Bit Processor Slices with 10K Compatible Outputs TIE10H888 TI				10171 Signetics							
9-Bit Magnitude Comparator SY10E166 Synergy (3707)				Delay Lines				Drivers			
12-Bit Parity Generator/Checker SY10E160 Synergy (3707)				Delay Line Module, 5-Tap (10 to 50 ns) ECLD050 Technitrol				Clock Driver, 1-to-9 with Dual Enable MB16A75 Fujitsu			
Buffers				Delay Line Module, 5-Tap (100 to 500 ns) ECLDL500 Technitrol				ECL-to-TTL Octal Bus Driver, Inverting (open collector) SN10KHT5538 TI			100
Hex MC10H188 Motorola			30	Delay Line Module, 5-Tap (15 to 75 ns) ECLD075 Technitrol				ECL-to-TTL Octal Bus Driver, Inverting (three-state) SN10KHT5540 TI			
MC10188 Motorola				Delay Line Module, 5-Tap (20 to 100 ns) ECLD100 Technitrol				ECL-to-TTL Octal Bus Driver (open collector) SN10KHT5539 TI			
10188 Signetics				Delay Line Module, 5-Tap (25 to 125 ns) ECLD125 Technitrol			70	ECL-to-TTL Octal Bus Driver (three-state) SN10KHT5541 TI			
9-Bit MC10E122 * Motorola				Delay Line Module, 5-Tap (30 to 150 ns) ECLDL150 Technitrol				TTL-to-ECL Octal Bus Driver, Inverting (output enable) SN10KHT5542 * TI			
SY10E122 Synergy (3707)				Delay Line Module, 5-Tap (40 to 200 ns) ECLDL200 Technitrol				TTL-to-TTL Octal Bus Driver (output enable) SN10KHT5543 * TI			105
Inverters				Delay Line Module, 5-Tap (50 to 250 ns) ECLDL250 Technitrol				Dual TTL/MST Bus MC10128 Motorola			
Hex MC10H189 * Motorola			35	Delay Line Module, 5-Tap (60 to 300 ns) ECLDL300 Technitrol				Triple 3-Input Bus MC10H423 Motorola			
MC10189 * Motorola				Delay Line Module, 5-Tap (70 to 350 ns) ECLDL350 Technitrol			75	Triple 4-3 Input Bus MC10H123 * Motorola			
10189 Signetics								MC10123 * Motorola			
Hex Inverter/Buffer MC10195 Motorola								10123 Signetics			110

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

* Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
10K Series				Gates, OR				4-Wide 3-Input			
Drivers (Cont'd)				Dual 3-Input 3-Output (line driver)				MC10H121 * Motorola			
Quad Bus	MC10192	Motorola		MC10H210 Motorola				MC10121 * Motorola			
	10192	Signetics		MC10110 Motorola				10121 Signetics			
Quad Driver with Enable	SY10E112	Synergy (3707)		MC10210 Motorola				Gates, Exclusive OR			
				10110 Signetics				Quad MC10H113 * Motorola			
1:9 Differential Clock Driver	SY10E111	Synergy		Quad 2-Input (3 OR, 1 OR/NOR)				MC10113 * Motorola			
				MC10H103 Motorola				10113 Signetics			
				MC10103 Motorola				1-8 or 2-4 Input			
				10103 Signetics				MC10H304 Motorola			
Flip-Flops, D-Type				Gates, NOR				2-4 or 1-6/1-4 Input			
D Flip-Flop with Set/Reset	MB1810	Fujitsu (3486)	5	Dual 3-Input 3-Output (line driver)				MC10H302 Motorola			
				MC10H211 Motorola				2-4/1-2 Input			
ECL-to-TTL Octal D-Type Flip-Flop, Inverting (three-state)	SN10KHT5576	TI		MC10111 Motorola				MC10H301 Motorola			
				MC10211 Motorola				2-5 Input			
ECL-to-TTL Octal D-Type Flip-Flop (three-state)	SN10KHT5574	TI		10111 Signetics				MC10H303 Motorola			
				10210 Signetics				Gates, Exclusive OR/NOR			
TTL-to-ECL Octal D-Type Flip-Flop, Inverting (output enable)	SN10KHT5580	TI		10211 Signetics				Quint 2-Input MC10E107 * Motorola			
				Dual 3-Input 3-Output (1 OR, 2 NOR) (line driver)				SY10E107 Synergy (3707)			
TTL-to-ECL Octal D-Type Flip-Flop (output enable)	SN10KHT5578	TI		MC10212 Motorola				Dual 2-Input MB1802 Fujitsu (3486)			
				Triple 4-3-3 Input				Triple 2-Input MC10H107 Motorola			
Dual D Flip-Flop with Set/Reset	MB1811	Fujitsu (3486)	10	MC10H106 Motorola				MC10107 Motorola			
				MC10106 Motorola				MC10507 * Motorola			
Dual Master-Slave	MC10H131	* Motorola		10106 Signetics				10107 Signetics			
	MC10131	* Motorola		Quad 2-Input (3 NOR, 1 OR/NOR)				Latches			
	MC10231	Motorola		MC10H102				ECL-to-TTL Octal D-Type Latch, Inverting (three-state)			
	10131	Signetics		MC10102				SN10KHT5575 TI			
	10231	Signetics		10102 Signetics				ECL-to-TTL Octal D-Type Latch (three-state)			
Dual Toggle Flip-Flop with Reset	MB1813	Fujitsu (3486)	15	Quad 3-Input (one input common)				SN10KHT5573 TI			
				MC10H100 Motorola				Quint MC10H175 Motorola			
Quad D Flip-Flop with Common Set/Reset	MB1812	Fujitsu (3486)	20	MC10100 Motorola				MC10175 Motorola			
				10100 Signetics				10175 Signetics			
Hex Master-Slave	MC10H176	Motorola		Gates, OR/NOR				TTL-to-ECL Octal D-Type Latch, Inverting (output enable)			
	MC10176	Motorola		Dual 2-Input MB1801 Fujitsu (3486)				SN10KHT5579 TI			
	10176	Signetics		Dual 2-Input, 2-Output MB1803 Fujitsu (3486)				TTL-to-ECL Octal D-Type Latch (output enable)			
Hex Master-Slave (with common reset)	MC10H186	* Motorola		Dual 4-5 Input				SN10KHT5577 TI			
	MC10186	* Motorola		MC10H109 * Motorola				Dual D Clocked			
	MC10186	* Motorola		MC10109 * Motorola				MC10H130 Motorola			
4-Bit	MC10E131	* Motorola		10109 Signetics				MC10130 Motorola			
4-Bit D Flip-Flop	SY10E131	Synergy (3707)		Triple 2-3-2 Input				10130 Signetics			
				MC10H105 * Motorola				Dual 2 to 1 Multiplexer-Latch			
				MC10105 * Motorola				MC10134 Motorola			
				10105 Signetics				10134 Signetics			
Flip-Flops, J-K Type				Quad 2-Input (one input common)				Dual 2 to 1 Multiplexer-Latch, Common Reset			
Dual J-K Master-Slave	MC10H135	* Motorola		MC10H101 * Motorola				MC10132 Motorola			
	MC10135	* Motorola		MC10101 * Motorola				10132 Signetics			
	10135	Signetics		10101 Signetics				Quad, Common Clock, Separate Output Enable			
Gates, AND				Quad 4-Input MC10E101 * Motorola				MC10168 Motorola			
Quint 2-Input AND/NAND	SY10E104	Synergy (3707)		SY10E101 Synergy (3707)				Quad D, Gated Output			
				Gates, OR-AND				MC10133 Motorola			
Dual 4-Input	10108	Signetics		Dual 2-Wide 3-Input				MC10153 Motorola			
Quad 2-Input (3 AND, 1 AND/NAND)	MC10H104	* Motorola		MC10H118 Motorola				10133 Signetics			
	MC10104	* Motorola		MC10118 Motorola				Quad 2-Input Multiplexer-Latch			
	10104	Signetics		10118 Signetics				MC10H173 Motorola			
Hex	MC10197	Motorola		4-Wide 4-3-3-3 Input				MC10173 Motorola			
				MC10H119 Motorola				10173 Signetics			
Gates, AND/NAND				MC10119 Motorola				3-Bit 4:1 Multiplexer			
Quint 2-Input	MC10E104	* Motorola		10119 Signetics				SY10E156 Synergy (3707)			
Quad 2-Input, Differential	MC10E404	* Motorola		Gates, OR-AND/OR-AND Invert				6-Bit SY10E150 Synergy (3707)			
				Dual 2-Wide 2-3 Input				6-Bit D-Type MC10E150 * Motorola			
				MC10H117 * Motorola				9-Bit with Parity Generator/Checker			
				MC10117 * Motorola				MC10E175 * Motorola			
				10117 Signetics				Memories			
				CAM (16-Bit content addressable)				MC10H155 Motorola			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
10K Series				3-Bit 4:1 Multiplexer				Quad CMOS to MECL Translator			
Memories (Cont'd)				SY10E171 Synergy (3708)				MC10H352 Motorola			
PROM (256x4)				3-Bit 4:1 Multiplexer/Latch				Quad Differential Receiver/MST to ECL			
10149 * Signetics				SY10E256 Synergy (3708)				MC10190 Motorola			
RAM (16x4) MC10H145 Motorola				3-Bit 4:1 with Latches				Quad ECL to TTL			
RAM (256x4) MBM10422A-5 Fujitsu				MC10E156 Motorola				MC10H350 Motorola			
MBM10422A-7 Fujitsu				MC10E256 Motorola				Quad ECL to TTL (differential input)			
MBM10423LL-6 Fujitsu				4-to-1 Multiplexer				MC10H125 * Motorola			
RAM (256x16) MB7700H Fujitsu				5-Bit 2:1 MC10E158 Motorola				MC10125 * Motorola			
RAM (1024x1) F10415 National				5-Bit 2:1 Multiplexer				10125 Signetics			
RAM (1024x4) MBM10470A-5 Fujitsu				SY10E158 Synergy (3707)				Quad ECL to TTL Translator			
RAM (1024x16)				5-Bit 2:1 Multiplexer/Latch				SLE5004 STC			
MB7750-10 Fujitsu				SY10E154 Synergy (3707)				Quad TTL/NMOS to MECL Translator			
RAM (4096x1) MBM10470A-10 Fujitsu				5-Bit 2:1 with Latches				MC10H351 Motorola			
MBM10470A-15 Fujitsu				MC10E154 Motorola				Quad TTL to ECL			
MBM10470A-20 Fujitsu				6-Bit 2:1 Multiplexer/Latch				MC10H424 Motorola			
MBM10470A-7 Fujitsu				SY10E155 Synergy				Quad TTL to ECL OR/NOR			
10470-10 Micro-C				6-Bit 2:1 Multiplexer Register				MC10H124 * Motorola			
10470-20 Micro-C				SY10E167 Synergy (3707)				MC10124 * Motorola			
RAM (4096x4) MBM10484-15 Fujitsu				6-Bit 2:1 Mux-Register				10124 Signetics			
MBM10484A-10 Fujitsu				MC10E167 Motorola				Hex ECL to MST			
MBM10484A-8 Fujitsu				6-Bit 2:1 with Latches				MC10191 Motorola			
1024x4 RAM (5 nsF)				MC10E155 Motorola				Octal ECL to TTL			
μPB10474A-5 NEC (3592)				8 to 1				SLE5008 STC			
1024x4 RAM (6 nsF)				MC10H164 * Motorola				Octal ECL-to-TTL Level Translator			
μPB10474A-6 NEC (3592)				MC10164 * Motorola				MB766 Fujitsu			
				10164 Signetics				Octal TTL-to-ECL Level Translator with Stroke			
				16:1, Single MC10E164 Motorola				MB767 Fujitsu			
								Octal 10KH ECL to TTL and TTL to 10KH ECL			
								BT501 Brooktree (3406)			
								9-Bit ECL to TTL			
								MC10H600 Motorola			
								MC10H601 Motorola			
								9-Bit Latch/ECL to TTL			
								MC10H603 Motorola			
								9-Bit Latch/TTL to ECL			
								MC10H602 Motorola			
								10K ECL to TTL with Latch			
								DP8480 National			
								DP8482 National			
								10KH ECL to-TTL, 11-Bit (27 MHz Video Net)			
								BT297 Brooktree			
								Miscellaneous			
								Analog Mixer, Double Balanced			
								MC12002 Motorola			
								Bus Transceiver, 3-Bit Registered			
								MC10E336 Motorola			
								D-Type Flip-Flop/Register, 5-Bit			
								MC10E452 Motorola			
								D-Type Flip-Flop/Register, 6-Bit			
								MC10E451 Motorola			
								D-Type Flip-Flop (1 GHz)			
								SLG8001 STC			
								D-Type Flip-Flop (1.5GHz)			
								MB813A Fujitsu			
								Decision Circuit			
								MB1820 Fujitsu (3486)			
								Differential Clock Driver, 1:9			
								MC10E111 Motorola			
								ECL Active Terminator- 6 pin SIP			
								S1011 AMCC			
								ECL/TTL Clock Driver (for 68030/040 processors)			
								MC10H642 Motorola			
								ECL/TTL Clock Driver (generates clocks for 68030/040 processors)			
								MC10H640 Motorola			
								ECL-to-Bus Level Transceiver/Receiver			
								MB565 Fujitsu			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
10K Series											
Miscellaneous (Cont'd)											
ECL-to-TTL Octal Bus Transceiver, Inverting (output enable)	SN10KHT5563	TI		Quad Bus Driver/Receiver with 2-to-1 Output Multiplexers	MC10H330	Motorola		8-Bit Shift Matrix	CXB1137	◊ Sony	
ECL-to-TTL Octal Bus Transceiver (output enable)	SN10KHT5562	TI		Quad Bus Receiver	MC10129 10129	Motorola Signetics		8-to-16Bit Comparator	CXB1135	◊ Sony	80
ECL-to-TTL Octal Registered Bus Transceiver, Inverting (output enable)	SN10KHT5593 SN10KHT5648	TI TI		Quad Differential Line Receiver	MC10H115 MC10115 10115	◊ Motorola ◊ Motorola Signetics	45	9-Bit Comparator	F100166 100166 SY100S366	◊ National Signetics Synergy (3709)	
ECL-to-TTL Octal Registered Bus Transceiver, (output enable)	SN10KHT5592 SN10KHT5646	TI TI	5	Quad Driver, Common Enable	MC10E112	◊ Motorola		9-Bit Magnitude Comparator	SY100E166	Synergy (3707)	
ECL-to-TTL Octal Registered Transceiver, Inverting (output enable)	SN10KHT5591	TI		Octal 1-2 Bus Selector	SLM6008	STC	50	12-Bit Parity Generator/Checker	SY100E160	Synergy (3707)	85
ECL-to-TTL Octal Registered Transceiver (output enable)	SN10KHT5590	TI		Two Modulus Prescaler, Divide by 20/21	MC12019	Motorola		Buffers			
ECL-TTL Load Reducing DRAM Driver, 4-Bit	MC10H660	◊ Motorola		2-Input, 4-Differential Output Clock Distributor	MB1804	Fujitsu (3486)		Triple Fan-Out	CXB1505	Sony	
Error Detection/Correction Circuit	MC10163	Motorola	10	2-3-2 Input OR/NOR, Triple (1.5GHz)	MB811A	Fujitsu		Triple Fan-Out Buffer	CXB1105	◊ Sony	
Exclusive OR/NOR, Dual (1.5 GHz)	MB812A	Fujitsu		4-Differential output Clock Distributor with Duty Control	MB1806	Fujitsu (3486)		8-Bit, Low Power	F100352	National	
Laser Driver	CXB1118 CXB1128	Sony Sony		4-Input OR/NOR, Dual (1.5 GHz)	MB810A	Fujitsu	55	9-Bit	MC10E122 F100122 100122 SY100E122 SY100S322	◊ Motorola ◊ National Signetics Synergy (3707) Synergy (3709)	90
Logic Array	Q20025 Q20045 Q20120	◊† AMCC ◊† AMCC ◊† AMCC	15	6-Bit D-Register	SY10E151	Synergy (3707)		Inverters			
PECL-TTL 1:9 Clock Driver (for ECL in PS series)	MC10H641	◊ Motorola		8-Bit Error Detection and Correction with Parity	MC10E193	◊ Motorola		9-Bit	F100121	National	
Programmable Delay Chip	MC10E195 MC10E196	◊ Motorola ◊ Motorola		8-Bit Error Detection/Correction (EDAC)	SY10E193	Synergy (3708)		9-Bit, Low Power	F100321	National	95
Pulse/Clock Generator	SLP7001	STC		8-Input Priority Encoder	MC10H165 MC10165 10165	Motorola Motorola Signetics	60	Bus-Oriented Circuits			
Quint Differential Line Receiver	MC10E116 SY10E116	◊ Motorola Synergy (3707)	20	9-Bit Parity Circuit (2 carry inputs)	MC10170	Motorola	65	3-Bit Registered Bus Transceiver	SY100E336	Synergy (3708)	
Quint Line Receiver	MC10E416	◊ Motorola		12-Bit Parity Generator/Checker	MC10H160 MC10160 10160	Motorola Motorola Signetics		3-Bit Scannable Registered Bus Transceiver	SY100E337	Synergy (3708)	
Scannable ECL Driver, 3-Bit	MC10E212	◊ Motorola		100K Series				Counters			
Scannable Register, 8-Bit	MC10E241	◊ Motorola	25	Arithmetic Functions				Multipurpose Counting Register	100136 F100136 100136	Micro-C ◊ National Signetics	100
Set/Reset Flip-Flop, 3-Bit Differential	MC10E431	◊ Motorola		Barrel Shifter, 16-Bit Parallel/Serial with TTL Compatible Outputs.	T1ET897	TI		4-Bit Ripple Counter	CXB1116	◊ Sony	
T-Type Flip-Flop (1.5GHz)	MB814A	Fujitsu		Barrel Shifter, 16-Bit Parallel/Serial with 100K Compatible Outputs.	T1E100897	TI		4-Stage Counter/Shift Register	F100336	National	
Single Chip Floating Point Processor	B2130 B3130 B4130	Bipolar Bipolar Bipolar	30	Decision Circuit	CXB1107	◊ Sony		4-Stage Ripple Counter	CXB1106	◊ Sony	
Dual Bus Driver/Receiver with 4-to-1 Output Multiplexers	MC10H332	Motorola		Look Ahead Carry Block	CXB1111	◊ Sony		8-Bit Synchronous Count Up	MC100E016 SY100E016	◊ Motorola Synergy (3707)	105
Dual Comparator	CXB1160 CXB1560	Sony Sony		Look Ahead Carry Circuit	F100179 100179	National Signetics	70	8-Bit Universal	CXB1536	Sony	
Triple Differential Line Receiver	10H116 MC10H116 MC10114 MC10116 MC10216 10114 10116 10216	Micro-C ◊ Motorola ◊ Motorola ◊ Motorola Motorola Signetics Signetics Signetics	35	Magnitude Compacator, 9-Bit	MC100E166	◊ Motorola		8-Bit Universal Counter	CXB1136	◊ Sony	
Quad Bus Driver/Receiver with Transmit and Receiver Latches	MC10H334	Motorola	40	Parity Checker/Generator, Dual	F100360	National		Decoders			
				Parity Generator/Checker, 12-Bit	MC100E160	◊ Motorola		Priority Encoder, Universal	100165A	Signetics	
				Parity Generator, Dual (with 8-bit comparator)	100160A	Signetics	75	Universal	100170 F100170 100170	Micro-C National Signetics	110
				Dual Parity Generator/Checker	SY100S360	Synergy (3709)		Universal Demultiplexer/Decoder	SY100S370	Synergy (3709)	
				4-Bit Arithmetic Logic Unit	CXB1138	◊ Sony		1-to-4 Demultiplexer	CXB1114	◊ Sony	
				8-Bit Processor Slices with 100K Compatible Outputs	T1E100888	TI		9, 8, 4-Bit Multiplexer	CXB1131	◊ Sony	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
100K Series (Cont'd)				Programmable Delay Line Module (9 to 137 ns) EKLP090 Technitrol				4-Bit D Flip-Flop SY100E131 Synergy (3707) 75			
Delay Lines				Programmable Delay Line Module (10 to 152 ns) EKLP6100 Technitrol				Flip-Flops, J-K Type			
Delay Line Module, 8-Tap (1.2 to 5 ns)	EKLDL005	Technitrol		Programmable Delay Line Module (40.75 to 13.25 ns) EKLPGR75 Technitrol				Triple J-K Master-Slave F100135 National			
Delay Line Module, 8-Tap (1.2 to 8 ns)	EKLDL008	Technitrol		Drivers				Gates, AND/NAND			
Delay Line Module, 8-Tap (10 to 80 ns)	EKLDL080	Technitrol		Backplane F100126 ♦ National Signetics				Quint 2-Input MC100E104 ♦ Motorola National Signetics SY100E104 Synergy (3707) SY100S304 Synergy (3709) 80			
Delay Line Module, 8-Tap (12.5 to 100 ns)	EKLDL100	Technitrol		ECL-to-TTL Octal Bus Driver, Inverting (open-collector) SN100KT5538 TI				Quad 2-Input, Differential MC100E404 ♦ Motorola			
Delay Line Module, 8-Tap (15 to 120 ns)	EKLDL120	Technitrol		ECL-to-TTL Octal Bus Driver, Inverting (three-state) SN100KT5540 TI				Quad 3-Input CXB1101 ♦ Sony CXB1501 Sony			
Delay Line Module, 8-Tap (2 to 16 ns)	EKLDL016	Technitrol	5	ECL-to-TTL Octal Bus Driver (open-collector) SN100KT5539 TI				Quintuple with Function Output F100104 National			
Delay Line Module, 8-Tap (20 to 160 ns)	EKLDL160	Technitrol		ECL-to-TTL Octal Bus Driver (three-state) SN100KT5541 TI				Gates, OR/NOR			
Delay Line Module, 8-Tap (25 to 200 ns)	EKLDL200	Technitrol		High Speed Line F100113 ♦ National Signetics				Quint 2-Input F100102 ♦ National National Signetics F100302 100102 SY100S302 Synergy (3709) 85			
Delay Line Module, 8-Tap (4 to 25 ns)	EKLDL025	Technitrol		TTL-to-ECL Octal Bus Driver, Inverting (output enable) SN100KT5542 * TI				Triple 5-Input F100101 ♦ National National Signetics F100301 100101 SY100S301 Synergy (3709) 90			
Delay Line Module, 8-Tap (4 to 32 ns)	EKLD032	Technitrol	10	TTL-to-ECL Octal Bus Driver (output enable) SN100KT5543 * TI				Quad 3-Input CXB1500 Sony			
Delay Line Module, 8-Tap (5 to 40 ns)	EKLDL040	Technitrol		Quad 100112 Micro-C F100112 ♦ National Signetics 100112				Quad 4-Input MC100E101 ♦ Motorola SY100E101 Synergy (3707) 95			
Delay Line Module, 8-Tap (6 to 48 ns)	EKLDL048	Technitrol		Quad Driver SY100S313 Synergy (3709)				Gates, OR-AND/OR-AND Invert			
Delay Line Module, 8-Tap (7 to 56 ns)	EKLDL056	Technitrol		Quad Driver (low skew differential drivers) F100115 National				Triple F100117 ♦ National Signetics 100117			
Delay Line Module, 8-Tap (8 to 64 ns)	EKLDL064	Technitrol		Quad Driver with Enable SY100E112 Synergy (3707)				Triple 2-Wide OA/OAI SY100S317 Synergy (3709)			
Delay Line Module, 8-Tap (9 to 72 ns)	EKLDL072	Technitrol	15	Hex Bus F100123 ♦ National Signetics 100123				5-Wide F100118 ♦ National Signetics 100118			
Programmable Delay Line	CXB1119 ♦ Sony CXB1139 ♦ Sony CXB1539 Sony			1:9 Differential Clock Driver SY100E111 Synergy (3707)				5-Wide 5,4,4,4,2 OA/OAI SY100S318 Synergy (3709) 100			
Programmable Delay Line Module (0.1 to 3.5 ns)	EKLPGR10	Technitrol		Flip-Flops, D-Type				Gates, Exclusive OR/NOR			
Programmable Delay Line Module (0.25 to 5.75 ns)	EKLPGR25	Technitrol	20	ECL-to-TTL Octal D-Type Flip-Flop, Inverting (three-state) SN100KT5576 TI				Quint F100107 ♦ National Signetics 100107			
Programmable Delay Line Module (0.5 to 9.5 ns)	EKLPGR50	Technitrol		ECL-to-TTL Octal D-Type Flip-Flop (three-state) SN100KT5574 TI				Quint 2-Input MC100E107 ♦ Motorola National Signetics F100307 SY100E107 Synergy (3707) SY100S307 Synergy (3709) 105			
Programmable Delay Line Module (1 to 17 ns)	EKLPGR10	Technitrol		TTL-to-ECL Octal D-Type Flip-Flop, Inverting (output enable) SN100KT5580 TI				Quad 1502 Sony			
Programmable Delay Line Module (1.5 to 24.5 ns)	EKLPGR015	Technitrol		TTL-to-ECL Octal D-Type Flip-Flop (output enable) SN100KT5578 TI				Quad 2-Input CXB1102 ♦ Sony			
Programmable Delay Line Module (2 to 32 ns)	EKLPGR020	Technitrol		Dual D Flip-Flop CXB1104 ♦ Sony				Latches			
Programmable Delay Line Module (2.5 to 39.5 ns)	EKLPGR025	Technitrol	25	Dual D-Type CXB1504 Sony				ECL-to-TTL Octal D-Type Latch, Inverting (three-state) SN100KT5575 TI			
Programmable Delay Line Module (3 to 47 ns)	EKLPGR030	Technitrol		Triple 100131 Micro-C F100131 ♦ National Signetics 100131				ECL-to-TTL Octal D-Type Latch (three-state) SN100KT5573 TI			
Programmable Delay Line Module (3.5 to 54.5 ns)	EKLPGR035	Technitrol		Triple D Flip-Flop F100331 ♦ National Signetics SY100S331				Mask-Merge/Latch SY100S356 Synergy			
Programmable Delay Line Module (4 to 62 ns)	EKLPGR040	Technitrol		Triple D-Type Master/Slave 100231A Signetics				TTL-to-ECL Octal D-Type Latch, Inverting (output enable) SN100KT5579 TI			
Programmable Delay Line Module (4.5 to 69.5 ns)	EKLPGR045	Technitrol		Quad D-FF w/Master Reset CXB1109 ♦ Sony				TTL-to-ECL Octal D-Type Latch (output enable) SN100KT5577 TI			
Programmable Delay Line Module (5 to 77 ns)	EKLPGR050	Technitrol	30	Quad D-Type CXB1509 Sony				Triple D F100130 ♦ National			
Programmable Delay Line Module (6 to 92 ns)	EKLPGR060	Technitrol		Hex F100151 ♦ National Signetics 100151				Quad Multiplexer/Latch SY100S355 Synergy (3709)			
Programmable Delay Line Module (7 to 107 ns)	EKLPGR070	Technitrol		Hex D Flip-Flop SY100S351 Synergy (3709)							
Programmable Delay Line Module (8 to 122 ns)	EKLPGR080	Technitrol		Hex, Low Power F100351 National							
				4-Bit MC100E131 ♦ Motorola							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
100K Series											
Latches (Cont'd)											
Hex D	F100150	◊ National Signetics		Quad 2-Input with Latch	F100155	◊ National Signetics		8-Bit	100141A	Signetics	
Hex D-Type	SY100S350	Synergy (3709)			100155				SY100E141	Synergy (3707)	
Hex D-Type Latch	F100350	National		Quad 4 to 1 Multiplexer w/ D-FF	CXB1143	◊ Sony			SY100S341	Synergy (3709)	
6-Bit	SY100E150	Synergy (3707)						8-Bit, Low Power	F100341	National	90
6-Bit D-Type	MC100E150	◊ Motorola		Quad 4 to 1 Multiplexer w/ Latch	CXB1142	◊ Sony			F100353	National	
8-Bit, Low Power	F100343	National		Quad 4:1 with D-FF	CXB1543	Sony	50	8-Bit, Low Power with Cut-Off Drivers	F100354	National	
8-Bit, Low Power with Cut-Off Drivers	F100344	National		Quad 4:1 with Latch	CXB1542	Sony		8-Bit Scannable Register	SY100E241	Synergy (3708)	
9-Bit with Parity Generator/Checker	MC100E175	◊ Motorola		Quad 2:1, Separate Selects	MC100E157	◊ Motorola		8-Bit Universal	100141	Micro-C	
Memories				Hex 2 to 1 Multiplexer w/ D-FF	CXB1141	◊ Sony			MC100E141	◊ Motorola	95
CAM (4x4)	F100142	◊ National		Hex 2 to 1 Multiplexer w/ Latch	CXB1140	◊ Sony			F100141	◊ National	
PROM (256x4)	100149	Signetics		Hex 2:1 with Latch	CXB1540	Sony	55	9, 8, 4-Bit Universal Shift Register	CXB1132	◊ Sony	
RAM (16x4)	F100402	◊ National			CXB1541	Sony		9-Bit	MC100E142	◊ Motorola	
RAM (16x4 register file)	100145	Micro-C		2:1 Triple Differential	MC100E457	◊ Motorola		9-Bit Hold	MC100E143	◊ Motorola	
	F100145	◊ National		2-Bit 8:1	MC100E163	◊ Motorola		9-Bit Hold Register	SY100E143	Synergy (3707)	
RAM (256x4)	MBM100422A-5	Fujitsu	15	3-Bit 4:1	MC100E171	◊ Motorola		9-Bit Shift Register	SY100E142	Synergy (3707)	100
	MBM100422A-7	Fujitsu		3-Bit 4:1 Multiplexer/Latch	SY100E156	Synergy (3707)		Translators			
	100422-7	Micro-C			SY100E256	Synergy (3708)		ECL to TTL Bidirectional, 100K in/10K out	F100128	National	
	F100422	◊ National		3-Bit 4:1 with Latches	MC100E156	◊ Motorola		ECL-to-TTL with Registers	F100395	◊ National	
RAM (1024x4)	MBM100474A-10	Fujitsu	20		MC100E256	◊ Motorola		Registered Bidirectional Transceiver, 40-Bit (common ECL input and output pins)	SC3002	Silicon Conn	
	MBM100474A-15	Fujitsu		4-to-1 Multiplexer	CXB1113	◊ Sony		Registered Bidirectional Transceiver, 40-Bit (separate ECL input and output pins)	SC3001	Silicon Conn	
	MBM100474A-5	Fujitsu		5-Bit 2:1	MC100E158	◊ Motorola		Registered Transmitter, 40-Bit ECL to CMOS	SC3010	Silicon Conn	105
	MBM100474A-7	Fujitsu		5-Bit 2:1 Multiplexer	SY100E158	Synergy (3707)		TTL-100K ECL	F100124	◊ National	
RAM (4096x1)	MBM100470A-10	Fujitsu	25	5-Bit 2:1 Multiplexer/Latch	SY100E154	Synergy (3707)		Quad ECL/TTL Translating Transceiver with Registers	100984	Signetics	
	MBM100470A-15	Fujitsu		5-Bit 2:1 with Latches	MC100E154	◊ Motorola		Hex ECL/TTL Translating Transceiver with Registers	100982	Signetics	
	MBM100470A-20	Fujitsu		6-Bit 2:1 Multiplexer/Latch	SY100E155	Synergy (3707)	30	Hex ECL-to-TTL Translator	F100325	National	
	MBM100470A-7	Fujitsu		6-Bit 2:1 Multiplexer Register	SY100E167	Synergy (3707)			SY100S325	Synergy (3708)	110
RAM (4096x4)	MBM100484-15	◊ Fujitsu		6-Bit 2:1 Mux Register	MC100E167	◊ Motorola		Hex TTL-to-ECL Translator	F100324	National	
	MBM100484A-10	◊ Fujitsu		6-Bit 2:1 with Latches	MC100E155	◊ Motorola			F100324	Signetics	
	MBM100484A-8	◊ Fujitsu		9, 8, 4-Bit Multiplexer	CXB1130	◊ Sony			100124A	Synergy (3708)	
Register File (16x4)	10402	National		16:1, Single	MC100E164	◊ Motorola		Octal 100K ECL to TTL and TTL to 100K ECL	BT502	Brooktree (3406)	75
1024x4 RAM (5 nsF)	μPB100474A-5	NEC (3592)		16-Input	100164	Micro-C		8-Bit Bidirectional ECL to TTL	F100128	National	115
1024x4 RAM (6 nsF)	μPB100474A-6	NEC (3592)			F100164	◊ National Signetics		9-Bit ECL to TTL	MC100H601	Motorola	
Multiplexers (Digital)				16-Input Multiplexer	SY100S364	Synergy (3709)		9-Bit Latch/ECL to TTL	MC100H603	Motorola	
Dual 8 to 1 Multiplexer w/ D-FF	CXB1145	◊ Sony		16-to-1 Multiplexer	CXB1110	◊ Sony		9-Bit Latch/TTL to ECL	MC100H602	Motorola	
Dual 8 to 1 Multiplexer w/ Latch	CXB1144	◊ Sony		Shift Registers				9-Bit TTL to ECL	MC100H600	Motorola	
Dual 8:1 with D-FF	CXB1545	Sony		Mask-Merge	F100156	◊ National		100K ECL-TTL	F100125	◊ National Signetics	120
Dual 8:1 with Latch	CXB1544	Sony		Dual 4-Bit	CXB1532	Sony		100K ECL-10K ECL	F100175	National	
Dual 8-Input	F100163	◊ National		4-Stage Counter/Shift Register	SY100S336	Synergy (3709)		100K-to-10K Translator w/Latches, 5-Bit	100175F	Signetics	
	F100363	National		6-Bit D Register	MC100E151	◊ Motorola					
	100163	Signetics		6-Bit D Register, Differential Data and Clock Inputs	SY100E451	Synergy (3708)	85				
	SY100E163	Synergy (3707)	40								
Dual 8-Input Multiplexer	SY100S363	Synergy (3709)									
Triple 4-Input	100171	Micro-C									
	F100171	National									
	100171	Signetics									
Triple 4-Input Multiplexer with Enable	SY100S371	Synergy (3709)	45								

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
100K Series				100K Series				100K Series			
(Cont'd)				(Cont'd)				(Cont'd)			
Miscellaneous				Miscellaneous				Miscellaneous			
Bus Transceiver, 3-Bit Registered	MC100E336	Motorola		Universal Priority Encoder	F100165 SY100S365	National Synergy		Hex D Flip-Flop	SY101S351	Synergy (3709)	
Clock Distributer	CXB1515	Sony		Dual 9-Bit Parity Generator/Checker	100160 F100160	Micro-C National		4-Bit D-Type	SY101E131	Synergy (3707)	
D-Type Flip-Flop/Register, 5-Bit	MC100E452	Motorola		Quad Clock Driver, Low Skew	F100115	National	40	Gates, AND/NAND			
D-Type Flip-Flop/Register, 6-Bit	MC100E451	Motorola		Quad Driver, Common Enable	MC100E112	Motorola		Quint 2-Input	SY101E104 SY101S304	Synergy (3707) Synergy (3709)	
Differential Clock Driver, 1:9	MC100E111	Motorola		Quintuple Line Receiver	F100114	National		Gates, OR/NOR			
ECL/TTL Clock Driver (for 68030/040 processors)	MC100H642	Motorola		Quintuple Line Transceiver	F100250	National		Quint 2-Input	SY101S302	Synergy (3709)	70
ECL/TTL Clock Driver (generates clocks for 68030/040 processors)	MC100H640	Motorola		1-to-10 Clock Distributor	CXB1115	Sony	45	Triple 5-Input	SY101S301	Synergy (3709)	
ECL-to-TTL Octal Bus Transceiver, Inverting (output enable)	SN100KT5563	TI	5	6-Bit D-Register	SY100E151	Synergy (3707)		Quad 4-Input	SY101E101	Synergy (3707)	
ECL-to-TTL Octal Bus Transceiver (output enable)	SN100KT5562	TI		8-Bit Error Detection and Correction with Parity	MC100E193	Motorola		Gates, OR-AND/OR-AND Invert			
ECL-to-TTL Octal Registered Bus Transceiver, Inverting (output enable)	SN100KT5593 SN100KT5648	TI TI	10	8-Bit Error Detection/Correction (EDAC)	SY100E193	Synergy (3708)		Triple 2-Wide OA/OAI	SY101S317	Synergy (3709)	
ECL-to-TTL Octal Registered Bus Transceiver (output enable)	SN100KT5592 SN100KT5646	TI TI		9-Bit Transceiver, Three-State Bidirectional Lines	100790 100990	Signetics Signetics	50	5-Wide 5,4,4,4,2 OA/OAI	SY101S318	Synergy (3709)	
ECL-to-TTL Octal Registered Transceiver, Inverting (output enable)	SN100KT5591	TI		22, 15, 7 Stage Descrambler	CXB1134	Sony		Gates, Exclusive OR/NOR			
ECL-to-TTL Octal Registered Transceiver (output enable)	SN100KT5590	TI	15	22, 15, 7 Stage Scrambler	CXB1133	Sony		Quint 2-Input	SY101E107 SY101S307	Synergy (3707) Synergy (3709)	75
ECL-TTL Load Reducing DRAM Driver, 4-Bit	MC100H660	Motorola		101K Series				Latches			
Laser Driver	CXB1108	Sony		Arithmetic Functions				Mask-Merge/Latch	SY101S356	Synergy	
Line Receiver, Differential Inputs/Single-Ended Outputs	100114A	Signetics		Dual Parity Generator/Checker	SY101S360	Synergy (3709)		Quad Multiplexer/Latch	SY101S355	Synergy (3709)	
Low Power Quad Driver	F100313	National		9-Bit Comparator	SY101S366	Synergy (3709)		Hex D-Type	SY101S350	Synergy (3709)	80
Microsequencer with 100K Compatible Outputs.	TIE100890	TI		9-Bit Magnitude Comparator	SY101E166	Synergy (3707)		6-Bit	SY101E150	Synergy (3707)	
Numerically Controlled Oscillator (300 MHz with 28-bit resolution)	STEL2172	STEL	(3705)	12-Bit Parity Generator/Checker	SY101E160	Synergy (3707)		Multiplexers (Digital)			
PECL-TTL 1:9 Clock Driver (for ECL in PS series)	MC100H641	Motorola		Buffers				Dual 8-Input	SY101E163	Synergy (3707)	
Phase Frequency Detector	CXB1112	Sony		9-Bit	SY101E122 SY101S322	Synergy (3707) Synergy (3709)	55	Dual 8-Input Multiplexer	SY101S363	Synergy (3709)	
Programmable Delay Chip	MC100E195 MC100E196	Motorola Motorola		Bus-Oriented Circuits				Triple 4-Input Multiplexer with Enable	SY101S371	Synergy (3709)	
Programmable Delay Line	CXB1119 CXB1139	Sony Sony	25	3-Bit Registered Bus Transceiver	SY101E336	Synergy (3708)		3-Bit 4:1	SY101E171	Synergy (3708)	
Quint Differential Line Receiver	MC100E116 SY100E116 SY100S314	Motorola Synergy (3707) Synergy (3709)	30	3-Bit Scannable Registered Bus Transceiver	SY101E337	Synergy (3708)		3-Bit 4:1 Multiplexer/Latch	SY101E156 SY101E256	Synergy (3707) Synergy (3708)	85
Quint Line Receiver	MC100E416 CXB1103 CXB1503	Motorola Sony Sony		Counters				5-Bit 2:1 Multiplexer	SY101E158	Synergy (3707)	
Scannable ECL Driver, 3-Bit	MC100E212	Motorola		8-Bit Synchronous Count Up	SY101E016	Synergy (3707)		5-Bit 2:1 Multiplexer/Latch	SY101E154	Synergy (3707)	
Scannable Register, 8-Bit	MC100E241	Motorola	35	Decoders				6-Bit 2:1 Multiplexer/Latch	SY101E155	Synergy (3707)	
Set/Reset Flip-Flop, 3-Bit Differential	MC100E431	Motorola		Universal Demultiplexer/Decoder	SY101S370	Synergy (3709)		6-Bit 2:1 Multiplexer/Register	SY101E167	Synergy (3707)	90
				Drivers				16-Input Multiplexer	SY101S364	Synergy (3709)	
				Quad Driver	SY101S313	Synergy (3709)		Shift Registers			
				Quad Driver with Enable	SY101E112	Synergy (3707)	60	4-Stage Counter/Shift Register	SY101S336	Synergy (3709)	
				Flip-Flops, D-Type				6-Bit D Register, Differential Data and Clock Inputs	SY101E451	Synergy (3708)	
				Triple D Flip-Flop	SY101S331	Synergy (3709)	65	6-Bit D-Register	SY101E151	Synergy (3707)	
								8-Bit	SY101E141 SY101S341	Synergy (3707) Synergy (3709)	95
								8-Bit Scannable	SY101E241	Synergy (3708)	
								9-Bit	SY101E142	Synergy (3707)	
								9-Bit Hold Register	SY101E143	Synergy (3707)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—ECL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
101K Series							
(Cont'd)							
Translators							
Hex ECL-to-TTL Translator	SY101S325	Synergy	(3708)				
Hex TTL-to-ECL Translator	SY101S324	Synergy	(3708)				
Miscellaneous							
Quint Differential Line Receiver	SY101E116	Synergy	(3707)				
	SY101S314	Synergy	(3709)				
Universal Priority Encoder	SY101S365	Synergy					
8-Bit Error Detection/Correction (EDAC)	SY101E193	Synergy	(3708)				
III and Other Series							
Counters							
Divide by 4 Prescaler (1 GHz)	MC1699	Motorola					
Divide by 4 (1 GHz)	SP8610	GEC Plessey					
	SP8611A	GEC Plessey					
	SP8611B	GEC Plessey					
	SP8617B	GEC Plessey					
	11C05C	National					
	11C05M	† National					
Divide by 5/6 Prescaler, 650 MHz	11C91C	National					
	11C91M	† National					
Divide by 10/11 Prescaler, 650 MHz	SP8680	GEC Plessey					
	11C90C	National					
	11C90M	† National					
Divide by 20 Prescaler	CA3232	Harris					
Flip-Flops, D-Type							
Master-Slave	SP1670B	GEC Plessey					
	11C70C	National					
Master-Slave (UHF prescaler)	11C06C	National					
Gates, OR/NOR							
Dual 4-Input	SP16F60	GEC Plessey					
	SP1660B	GEC Plessey					
Dual 4-5 Input	MC10H209	* Motorola					
	11C01C	National					
Multivibrators							
Voltage Controlled	SP1658	GEC Plessey					
	MC1658	Motorola					
Miscellaneous							
Prescaler for Multiband Digital Tuning System	TD6109	Toshiba					
Voltage Controlled Oscillator	SP1648	GEC Plessey					
	MC1648M	♦† Motorola					
Dual Analog/Digital Comparator	SP1650B	GEC Plessey					
Quad Line Receiver	SP1692B	GEC Plessey					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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DIGITAL—Gallium Arsenide

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions				Quad 3-Input (320 ps gate delay)	10G000A	TriQuint		Receiver, 1 Gb/s	GA9012	TriQuint	
Carry Look-Ahead Generator (1.4 GHz)	10G101	TriQuint		Quad 3-Input (390 ps gate delay)	10G000A-4	TriQuint		Switch, SPSD, Microwave	TQ9151	TriQuint	
Phase Accumulator, 32-Bit (1 GHz clock rate)	10G102	TriQuint		Gates, Exclusive OR/NOR				Transimpedance Amplifier (broad bandwidth, dc to 700 MHz)	16G071	GigaBit	
4-Bit Adder (1.3 GHz)	10G100	TriQuint		Quad 2-Input Exclusive-OR/Exclusive-NOR Gate (1.8 GHz data rate)	10G002M	TriQuint		Transimpedance Amplifier (1.9 GHz bw)	16G074	GigaBit	
Buffers				Multiplexers				Transimpedance Amplifier (600 MHz bw)	16G072	GigaBit	60
Dual Fanout Buffer with 2:1 Multiplexer Inputs (1.6 GHz data rate)	10G010-2	TriQuint	5	Time Division Demultiplexer (1.45 Gbps)	10G041A	TriQuint	30	Transmitter, 1 Gb/s	GA9011	TriQuint	
	10G010-3	TriQuint		Time Division Multiplexer (1.45 Gbps)	10G040A	TriQuint		Dual Complementary Driver/Comparator (1.75 GHz data rate)	10G012B	TriQuint	
	10G010M-2	TriQuint		Quad 2:1 Multiplexer (1.45 GHz data rate)	10G004-3	TriQuint			10G013	TriQuint	
	10G010M-3	TriQuint		Quad 2:1 Multiplexer (1.8 GHz data rate)	10G004-2	TriQuint		Dual 9-bit Parity Generator and Checker, 8-bit Word Comparator (850 ps delay)	10G045	TriQuint	
Dual, 1-4 Fanout Buffer (1.6 GHz)	10G011B	TriQuint		Quad 4:1/Dual 8:1 Multiplexer (1.5 GHz data rate)	10G046	TriQuint		Quad 2-Input XOR/XNOR/Line Receiver (600 ps delay)	10G002	TriQuint	65
Counters, Binary				Shift Registers				0.5-5 GHz MMIC Amplifier	HMR10502	Harris	
Counter, Divider, 7-Stage, Divide by 2, 4—64 (3 GHz)	10G065	TriQuint		Octal Shift/Storage, PN Code Generator (1.5 GHz clock rate)	10G022	TriQuint		1-5 GHz MMIC Amplifier	HMR10503	Harris	
Divider, Divide by 5/6, 10/11, 20/21, 40/41 (2 GHz)	10G070	TriQuint	10	Miscellaneous				2-6 GHz Monolithic Microwave IC Amplifier	HMM10610	Harris	35
Divider, 2-Stage, Divide by 2, 4 (3 GHz)	10G060	TriQuint		Amplifier, Low Noise (1.2 to 1.6 GHz)	TQ9121	TriQuint		6-18 GHz MMIC Amplifier	HMM11810	Harris	
Four-Stage Synchronous Programmable Counter (1.3 GHz clock rate)	10G061	TriQuint		Amplifier, 1-8 GHz	TQ9111	TriQuint		64x64 Crosspoint Switch, ECL I/O Up to 200 M/s data rate, -2V supply	VS864FC	o Vitesse	70
Decoders				Arrays, Diode, Schottky 14 Single, 1 full-wave rectifier	16G010	TriQuint		512x8 Mask Programmable ROM (1.5 ns access time)	14GD048	TriQuint	
Dual 2-Line to 4-Line Decoder/Demultiplexer and Single 3-Line to 8-Line Decoder/Demultiplexer (650 ps delay)	10G044	TriQuint			16G011	TriQuint			14GM048	TriQuint	
Drivers				Arrays, Transistor, Single-gate D-MESFETS, 9-Single, 1 dual	16G020	TriQuint	40				
Dual Complementary Driver/Comparator (1.5 GHz data rate)	10G012B-3	TriQuint		Arrays, Transistor, Dual-Gate D-MESFETS, 8 Single	16G021	GigaBit					
Dual Complementary Driver/Comparator (1.75 GHz data rate)	10G012B	TriQuint	15	Attenuator, 10dB variable	TQ9161	TriQuint					
Flip-Flops, D-Type				Laser Diode Driver (up to 3 Gb/s NRZ)	16G075	GigaBit					
Dual Precision D-Type (1.8 GHz clock rate)	10G021A-3	TriQuint		LED Driver (up to 1 Gb/s NRZ)	16G076	GigaBit					
Dual Precision D-Type (2.3 GHz clock rate)	10G021A	TriQuint		Line Receiver (3 GHz data rate)	TQ6331-M	TriQuint	45				
Dual Precision D-Type (2.7 GHz clock rate)	10G021A-2	TriQuint		MMIC Amplifier (0.5-3 GHz)	HMR10504	Harris					
Quad D-Type with Exclusive-OR Inputs (1.6 GHz data rate)	10G024-3	TriQuint		MMIC Amplifier (1-3 GHz)	HMR10505	Harris					
Quad D-Type with Exclusive-OR Inputs (1.9 GHz data rate)	10G024-2	TriQuint	20	MMIC Amplifier (6-18 GHz)	HMM11820	Harris					
Quad D-Type with 2:1 Multiplexer Inputs (1.6 GHz data rate)	10G023-3	TriQuint		Monolithic Microwave Amplifier (2 to 6 GHz)	HMM10620	Harris					
Quad D-Type with 2:1 Multiplexer Inputs (1.9 GHz data rate)	10G023-2	TriQuint		NCO/DAC Hybrid	STEL2373	STEL (3705)	50				
Gates, AND/NAND				Pin Driver, Dual High-Speed (800 MHz)	16G061A	GigaBit					
AND-OR/AND-OR Invert Gate, Dual (1.4 GHz data rate)	10G003M	TriQuint		Pin/Line Driver (3 GHz data rate)	TQ6330-M	TriQuint					
AND-OR/AND-OR-Invert Gate, Dual (1.4 GHz data rate)	10G003	TriQuint		PLL Clock and Data Recovery Circuit (50 to 800 Mbit/s NRZ data rate)	16G041-H	GigaBit					
Gates, NOR				Power Combiner, Active (1 to 10 GHz, provides in-phase signal combining and switching)	TQ9131	TriQuint					
Quad 2-Input (320 ps gate delay)	10G001	TriQuint	25	Power Divider (Active signal splitter)	TQ9141	TriQuint	55				
Quad 2-Input (390 ps gate delay)	10G001-4	TriQuint									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—HNIL/HTL

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions				Dual or Set-Reset (Cont'd)				Hex Inverter/Gate (quad inverter, dual NAND)			
4-Bit Comparator				313A/C TeledyneC				333A/C TeledyneC			
343A/C TeledyneC				313B/M † TeledyneC				333B/M † TeledyneC			
343B/M † TeledyneC				Dual with Reset				Multiplexers (Digital)			
Buffers/Inverters				MC663 Motorola				Dual 4-Bit 351A/C TeledyneC			
Hex MC690 Motorola				Flip-Flops, R-S Type				8-Bit 350A/C TeledyneC			
332A/C TeledyneC				Master-Slave MC664 Motorola				Multivibrators			
332B/M † TeledyneC				Gates, AND				Dual Monostable			
Hex Open Collector MC678 Motorola				Dual 2-Input Interface Buffer				MC667 Motorola			
Hex Strobed MC677 Motorola				391 TeledyneC				342A/C TeledyneC			
Hex Strobed, Open Collector				Dual 4-Input Interface Buffer				342B/M † TeledyneC			
334A/C TeledyneC				390 TeledyneC				Dual Retriggerable Monostable			
Counters, Binary				Gates, NAND				347A/C TeledyneC			
Binary MC685 Motorola				Dual 2-Input Interface Buffer				347B/M † TeledyneC			
372A/C TeledyneC				392 TeledyneC				Shift Registers			
372B/M † TeledyneC				Dual 4-Input MC660 Motorola				4-Bit Parallel-In Parallel-Out			
Binary Up/Down				MC661 Motorola				375A/C TeledyneC			
374A/C TeledyneC				Dual 4-Input Interface Buffer				375B/M † TeledyneC			
Counters, Decade				395 TeledyneC				Translators			
Decade 371A/C TeledyneC				Dual 5-Input 322A/C TeledyneC				Dual High to Low Interface (HNL to DTL, TTL)			
371B/M † TeledyneC				322B/M † TeledyneC				361A/C TeledyneC			
Decade Up/Down				Triple 3-Input MC670 Motorola				361B/M † TeledyneC			
373A/C † TeledyneC				MC671 Motorola				Dual Interface Element, (line driver, receiver, ECL to TTL, MOS to TTL, Schmitt trigger)			
373B/M † TeledyneC				Quad 2-Input MC668 Motorola				396AC TeledyneC			
Decoders				MC672 Motorola				Dual Low to High Interface (TTL to HNL)			
BCD to Decimal, Open Collector				303A/C TeledyneC				362A/C TeledyneC			
381A/C TeledyneC				303B/M † TeledyneC				362B/M † TeledyneC			
381B/M † TeledyneC				321A/C TeledyneC				Quad Low to High Interface (TTL to HNL)			
Decoders/Drivers				321B/M † TeledyneC				363A/C TeledyneC			
BCD to Decimal Decoder/Lamp Driver, Open Collector				324A/C TeledyneC				363B/M † TeledyneC			
380B/M † TeledyneC				324B/M † TeledyneC				Miscellaneous			
BCD to Decimal (for gas discharge display tubes)				Quad 2-Input, Open Collector				Timer (see also linear-timers)			
382A/C TeledyneC				323A/C TeledyneC				355A/C TeledyneC			
382B/M † TeledyneC				323B/M † TeledyneC				Dual Pulse Stretcher			
BCD to Seven Segment				2,2,3,3-input 325A/C TeledyneC				MC675 Motorola			
383A/C TeledyneC				325B/M TeledyneC				349A/C TeledyneC			
383B/M † TeledyneC				326A/C TeledyneC				Quad Schmitt Trigger/Line Receiver			
Quad 2-Input Power, Open Collector				326B/M TeledyneC				367A/C TeledyneC			
302A/C TeledyneC				4, 3, 4-input 304A/C TeledyneC				367B/M † TeledyneC			
302B/M † TeledyneC				304B/M † TeledyneC				Quad Schmitt Trigger/Line Receiver, Open Collector			
Drivers				Gates, AND-OR-Invert				368A/C TeledyneC			
BCD to Decimal Decoder/Lamp Driver, Open Collector				Expandable 344A/C TeledyneC				Timer (see also linear-timers)			
380A/C TeledyneC				Dual 2-Wide, 2-Input				355A/C TeledyneC			
Dual 4-Input Line Driver, Expandable				341A/C TeledyneC				Dual Pulse Stretcher			
MC662 Motorola				341B/M † TeledyneC				MC675 Motorola			
Dual 5-Input Power NAND Driver				Gates, OR				349A/C TeledyneC			
301A/C TeledyneC				Dual 2-Input Interface Buffer				Quad Schmitt Trigger/Line Receiver			
301B/M † TeledyneC				393 TeledyneC				367A/C TeledyneC			
Flip-Flops, D-Type				Gates, NOR				367B/M † TeledyneC			
Quad 370A/C TeledyneC				Dual 2-Input Interface Buffer				Quad Schmitt Trigger/Line Receiver, Open Collector			
370B/M † TeledyneC				394 TeledyneC				368A/C TeledyneC			
Flip-Flops, J-K Type				Quad 2-Input 306A/C TeledyneC				Timer (see also linear-timers)			
Master-Slave or Reset				Quad 2-Input, Open Collector				Dual Pulse Stretcher			
311A/C TeledyneC				307A/C TeledyneC				MC675 Motorola			
311B/M † TeledyneC				Gates, Miscellaneous				349A/C TeledyneC			
Dual or Set-Reset				Dual 4-Input Expander (for 600 series)				Quad Schmitt Trigger/Line Receiver			
312A/C TeledyneC				MC669 Motorola				367A/C TeledyneC			
312B/M † TeledyneC				Dual 5-Input Expander (for 300 series)				367B/M † TeledyneC			
(Continued)				331A/C TeledyneC				Quad Schmitt Trigger/Line Receiver, Open Collector			
				331B/M † TeledyneC				368A/C TeledyneC			
								Timer (see also linear-timers)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Arithmetic Functions				Comparator, 8-Bit TTL-ALS				Floating Point Multiplier/Divider (32/64-bit)					
Adder/Subtractor Quad Serial				(Cont'd)				B2110A					
TTL-F	54F385	† National	5	SN74ALS520	° TI	65		Floating Point, Registered ALU, 22-bit, 8.3 MHz					
	74F385	° National		SN74ALS521	° TI			TDC1033					
	74F385	Signetics		SN74ALS522	TI			‡ TRWLSI					
TTL-LS	SN54LS385	°† TI		TTL-F				Full Adder					
				MC54F521	° Motorola			TTL					
Adder, 4-Bit BCD				MC74F521	° Motorola	70		ML5480					
TTL-S	N82S83	† Signetics	10	54F521	°† National			ML7480					
AM, FM, PM Quadrature Output Direct Digital Signal Synthesizer, 16-Bit, 20 MHz				74F521	°† National			5480					
				54F521	°† Signetics			7480					
				74F521	°† Signetics			Full Adder, BCD with Fast Carry					
				SN54F520	°† TI	75		54F583					
Comparator, Address				SN54F521	°† TI			74F583					
TTL-ALS	SN74ALS677A	TI	15	SN74F520	° TI			74F583					
	SN74ALS678	TI		SN74F521	° TI			Full Adder, Dual					
	SN74ALS679	TI		TTL-LS				TTL					
	SN74ALS680	TI		AM25LS2521C	AMD	80		9304					
Comparator, Registered				AM25LS2521M	† AMD			54H183					
TTL-F	54F524	† National	20	Comparator, 8-Bit Identity, Fuse Programmable plus 4-Bit Comparator				74H183					
	74F524	° National		TTL-ALS				SN54LS183					
	74F524	Signetics		SN74ALS527	TI	25		Full Adder, 2-Bit Binary					
Comparator, 4-Bit Magnitude				Comparator, 8-Bit Magnitude Open Collector				TTL					
TTL	TD3502A	Toshiba		TTL-ALS	DM74ALS518	National		5482					
Comparator, 4-Bit Magnitude, Separate A = B Output					DM74ALS519	National		7482					
TTL	HD74LS85	Hitachi	30		DM74ALS689	National	85	Logic Sequencer					
	SN54LS85	† Motorola			SN74ALS518	° TI		TTL-S					
	SN74LS85	Motorola			SN74ALS519	° TI		TIB82S105B					
	DM54LS85	† National		TTL-F	SN54F519	°† TI		Logic Unit/Function Generator					
	DM54LS85	† National			SN74F518	° TI	90	TTL					
	DM74LS85	National	35		SN74F519	° TI		DM54181					
	DM7485	National		Comparator, 8-Bit Magnitude Totem-Pole				74181					
	54LS85	† National		TTL-ALS	SN54ALS688	† TI		9341					
	74LS85	° National			SN74ALS688	TI		54181					
	7485	National	40	TTL-AS	SN54AS885	°† TI	95	DM54AS881B					
	9324C	National			SN74AS885	° TI		DM74AS181B					
	9324M	† National		TTL-LS	SN74LS682	Motorola		DM74AS181B					
	54L85	† Rochester			SN74LS684	Motorola		DM74AS881B					
	74LS85	† Rochester			SN74LS688	Motorola	100	SN54AS181B					
	7485	Rochester	45		SN54LS682	°† TI		SN74AS1181					
	N9324	Signetics			SN54LS684	°† TI		SN74AS181B					
	54LS85	† Signetics			SN54LS688	°† TI		SN74AS881A					
	5485	† Signetics			SN74LS682	TI	105	TTL-F					
	74LS85	Signetics			SN74LS684	° TI		MC54F181					
	7485	Signetics	50		SN74LS688	TI		MC54F381					
	SN54LS85	°† TI		Comparator, 9-Bit Identity				MC54F382					
	SN5485	† TI		TTL-ALS	SN74ALS29809	TI		MC74F181					
	SN74LS85	° TI		Comparator, 10-Bit Identity				MC74F381					
	SN7485	TI		TTL	DM7130	† National	110	MC74F382					
TTL-F	74F85	° Signetics	55		DM8130	National		54F181					
TTL-S	54S85	† Signetics			7130	Rochester		54F381					
	74S85	Signetics			8130	Rochester		54F382					
	SN54S85	† TI		Comparator, 12 Bit				74F181					
	SN74S85	TI			SE5105A	Signetics	115	74F381					
Comparator, 6-Bit Identity					SA5105A	Signetics		74F382					
TTL	DM7160	† National	60		SN54F518	°† TI		74F81					
	DM8160	National		Comparator, 8-Bit Magnitude Open Collector				SN54F381					
	7160	Rochester		TTL-F	SN54F518	°† TI		SN54F382					
	8160	Rochester		Cycle Redundancy Check (CRC) Generator/Checker				SN74F381					
TTL-ALS	SN74ALS29806	TI		TTL-F	54F401	† National	120	SN74F382					
TTL-S	93S46	Rochester	65		74F401	° National		TTL-LS					
Comparator, 6-Bit, Unified Bus, Active Pull Up				Digital Anti-aliases (half-band or low pass) Filter, 55 Pre-loaded Coefficients, 12x12-bits, 40 MHz				HD74LS181					
TTL	DM8131	National			TMC2242-1	TRWLSI		SN54LS181					
	8131	Rochester		Digital Anti-aliases (half-band or low-pass) Filter, 55 Pre-loaded Coefficients, 12x12-bits, 30 MHz				SN54LS181					
Comparator, 6-Bit, Unified Bus, Open Collector					TMC2242	TRWLSI	125	SN54LS381A					
TTL	DM7136	† National	70	Error Detection and Correction Circuit, 32-Bit				SN54LS382A					
	DM8136	National		TTL-ALS	SN54ALS632A	°† TI		SN74LS181					
	7136	Rochester		Fixed Point Multiplier/Accumulator (16x16)				SN74LS381A					
	8136	Rochester			B2011A	° Bipolar		SN74LS382A					
Comparator, 8-Bit				Floating Point ALU (32/64-bit)				TTL-S					
TTL-ALS	DM74ALS520	National	75		B2120A	° Bipolar		54S181					
	DM74ALS521	National		Comparator, 12-Bit				74S181					
	DM74ALS522	National			SA5105A	Signetics		SN54S181					
	SN54ALS520	*† TI		Comparator, 8-Bit Magnitude Open Collector				SN54S381					
				TTL-F	SN54F518	°† TI		SN74S181					

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

° Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

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DIGITAL-TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions (Cont'd)								4-Bit Binary Full Adder, Look-Ahead Carry (Cont'd)			
Look-Ahead Carry Generator				Multiplier, 8x8-Bits, 45 ns				TTL-F			
TTL	AM2902AM	*† AMD		TMC208K-1	TRWLSI			SN54F283	*† TI		
	54182	Rochester		TMC28KU-1	TRWLSI			SN74F283	* TI		
	74182	Rochester		Multiplier, 8x8-Bits, 65 ns				TTL-LS			
	9342	Rochester		TMC208K	TRWLSI		50	HD74LS283A	Hitachi		100
TTL-AS				TMC28KU	TRWLSI			HD74LS83A	Hitachi		
	DM74AS182	National	5	Parity Generator, 10 ns, 36-Bit				SN54LS283	† Motorola		
	DM74AS264	National		S4280	◊† AMCC			SN54LS83A	† Motorola		
	DM74AS282	National		Rectangular/Polar Bi-directional Coordinate Transformer, 25MHz				SN74LS283	Motorola		105
	SN74AS182	* TI		TMC2330-1	TRWLSI			SN74LS83A	Motorola		
	SN74AS264	TI		Register/Arithmetic Logic Unit				DM54LS283	† National		
	SN74AS282	TI	10	TTL-LS	SN54LS681	◊† TI		DM54LS83A	† National		
	SN74AS882A	* TI		SN74LS681	TI			DM74LS283	National		
TTL-F				TTL-S	54S281	Rochester	55	DM74LS83A	National		
	MC54F182	† Motorola		SN74S281	TI			54LS283	† National		110
	MC74F182	Motorola		Register File, Dual 16x4				54LS83A	† National		
	54F182	◊† National		TTL-ALS	SN54ALS870	◊† TI		74LS283	◊ National		
	74F182	◊ National	15	Register File (4x4)				74LS83	National		
	74F182	* Signetics		TTL-F	74F670	Signetics		74LS83	Rochester		
	74F882	Signetics		Shifter, Barrel Shifter				54LS283	† SGS-Thomson		115
TTL-S				TTL-F	SN54F350	*† TI		54LS83A	† SGS-Thomson		
	DM74S182	National		Binary Multiplier, 4x4				74LS283	SGS-Thomson		
	93S42	Rochester		TTL-LS	SN54LS275	◊† TI	60	74LS83A	SGS-Thomson		
	54S182	† Signetics		Octal Comparator				54LS283	† Signetics		120
	SN54S182	† TI		TTL-F	M74F521	Mitsubishi		54LS83A	† Signetics		
	SN74S182	TI		Two's Complement Multiplier, 8-Bit Serial/Parallel				74LS283	Signetics		
Look-Ahead Carry Generator for ALU				TTL-F	54F384	◊† National		74LS83A	Signetics		
TTL	ML54182	† Lansdale		74F384	◊ National			SN54LS283	◊† TI		
	ML74182	Lansdale		4-Bit Microprocessor Slice (ALU)				SN54LS83A	† TI		125
Look-Ahead Carry Generator, 32-Bit				TTL-S	AM2901C	◊° AMD	65	SN74LS283	TI		
TTL-AS	SN54AS882A	◊†† TI	25	3002	Intel			4-Bit Binary Full Adder with Full Carry			
Magnitude Comparator, 4-Bit				SFC2901B	SGS-Thomson			TTL-F	M74F283	Mitsubishi	
TTL-F	MC54F85	◊† Motorola		N3002	Signetics			4-Bit BCD (add, subtract, compare)			
Magnitude Comparator, 4-Bit				S3002	† Signetics			TTL-S	N82S82	Signetics	130
TTL-F	MC74F85	◊ Motorola		4-Bit ALU				4-Bit BCD ALU			
Multiplier/Accumulator, 12x12-Bit, 135NS				TTL-LS	T74LS181	SGS-Thomson		TTL-F	N74F582	Signetics	
TMC2209	† TRWLSI			4-Bit ALU and Function Generator				4-Bit BCD Arithmetic Logic Unit			
Multiplier/Accumulator, 8x8-Bit, 40NS				TTL	ML54181	Lansdale	70	FAST	54F582	† National	
TMC2208	◊† TRWLSI			ML74181	Lansdale			74F582	National		
Multiplier, Two's Complement (8-bit serial/parallel)				54181	† Rochester			8-Bit Magnitude			
TTL-LS	AM25LS14A	AMD	30	4-Bit ALU with Look-Ahead Carry				TTL-AS	SN74AS866	* TI	
Multiplier (2x4, Binary Parallel, Serial Output)				TTL	9340	Rochester		8-Bit Odd/Even Parity Generator/Checker			
TTL-LS	54LS261	† Signetics		4-Bit Magnitude Comparator				TTL	ML54180	† Lansdale	135
SN54LS261	◊† TI			TTL	ML5485	† Lansdale		ML74180	Lansdale		
Multiplier, 4-Bit Three-State (two ICs to a set, 7875A and 7875B)				5485	† Rochester			54180	† Rochester		
TTL	DM8875	National		4-Bit Slice, Expandable Control				8-Bit Serial/Parallel Register (for use with 25LS14/74LS384)			
Multiplier (4x2), Binary				TTL-S	SN74S482	TI		TTL-LS	SN74LS322A	Motorola	140
TTL	9344	Rochester		4-Bit Binary Full Adder				54LS322	† National		
Multiplier (4x2), 2's Complement				TTL	ML5483	† Lansdale	35	SN54LS322A	◊† TI		
TTL-S	AM25S05C	AMD		ML7483	Lansdale			SN74LS322A	TI		
	AM25S05M	† AMD		TTL-LS	T74LS283	SGS-Thomson	80	9-Bit Latchable Transceiver w/Parity Generator/Checker			
	93S43	Rochester		T74LS83A	SGS-Thomson			TTL-F	54F899	◊† National	
Multiplier (4x4), Binary Parallel (used with 54/74284)				4-Bit Binary Full Adder, Look-Ahead Carry				74F899	◊° National		
TTL	DM54284	† National		TTL	DM5483	† National		9-Bit Odd/Even Parity Generator			
Multiplier (12x12), 2's Complement & Unsigned Magnitude, 16-Bit Product				54283	† National			TTL-LS	T74LS280	SGS-Thomson	145
TTL	MPY112K	† TRWLSI		5483	† National			54LS280	† SGS-Thomson		
Multiplier (12x12), 2's Complement, Unsigned Magnitude				74283	National		85	74LS280	SGS-Thomson		
TTL	MPY012H	TRWLSI	40	74283	Rochester			9-Bit Odd/Even Parity Generator/Checker			
Multiplier (16x16), High Speed				7483	Rochester			TTL-F	M74F280	Mitsubishi	90
TTL-S	CY7C516	◊† Cypress		5483	† Signetics			9-Bit Parity Generator/Checker			
	CY7C517	◊† Cypress		SN54283	† TI			TTL-AS	SN54AS286	◊† TI	
Multiplier (16x16), Integer				SN5483A	† TI			9-Bit Parity Generator/Checker with Parity I/O Port			
	B2018	* Bipolar		SN74283	TI		95	TTL-F	SN54F286	† TI	
Multiplier (16x16), 2's Complement and Unsigned Magnitude				TTL-F	MC54F283	† Motorola		1024 POWT, 16-Bit FFT Processor, 20 MHz			
TTL	MPY016H	*† TRWLSI	45	MC74F283	Motorola			TMC2310	TRWLSI		150
	MPY016K	*† TRWLSI		54F283	◊† National			TMC2310-1	TRWLSI		
	MPY016K-1	*† TRWLSI		74F283	◊° National			(Continued)			
				74F283	* Signetics						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Buffers				Hex, Three-State TTL				Hex, Three-State TTL			
Buffer/Line Driver, 16-Bit, Three-State, Inverting	74FR16540	◊ National		TTL-ALS DM74ALS125	National			DM8097	National		
Buffer/Line Driver, 16-Bit, Three-State, Non-Inverting	74FR16541	◊ National		TTL-F MC54F125	† Motorola			54365	† Rochester		110
Buffer, Parallel-In/Serial-Out Scan Line Buffer	M66307	Mitsubishi		MC54F126	† Motorola			54367	† Rochester		
Buffer, Toggle Line Buffer	M66305	Mitsubishi		MC74F125	Motorola			54365A	◊† Signetics		
Dual 4-Input NAND	TTL-H ML3024	Lansdale (3552)	5	Quad, Three-State			65	54367A	◊† Signetics		
	ML3124	† Lansdale (3552)		TTL-F MC74F126	Motorola			74365	Signetics		
	RC3024	Rochester		Quad, Three-State				74367	Signetics		
	RC3124	Rochester		TTL-LS T74LS125A	SGS-Thomson			SN54365A	† TI		115
Dual 4-Input NAND Buffer	TTL-LS T54LS40	† SGS-Thomson		Quad 2-Input NAND				SN54367A	† TI		
Dual 4-Input NAND (positive)	TTL-ALS M74ALS40A	Mitsubishi		TTL-ALS M74ALS37A	Mitsubishi			SN74365A	TI		
Quad Buffer/Line Driver, Three-State	TTL-F M74F125	Mitsubishi		Quad 2-Input NAND Buffer			70	SN74367A	TI		
Quad Gated, Three-State				TTL-LS T54LS37	† SGS-Thomson						
TTL	DM54125	† National		T54LS38	† SGS-Thomson			TTL-ALS M74ALS103A	Mitsubishi		120
	DM74125	National		Quad 2-Input NAND (positive, open collector)				DM74ALS103A	National		
	DM8093	National		TTL-ALS M74ALS38A	Mitsubishi			SN54ALS103A	† TI		
	54125	† National		Quad 2-Input NOR Buffer				SN74ALS103A	TI		
	74125	National		TTL-LS T74LS28	SGS-Thomson			TTL-AS DM74AS103A	National		125
	74125	Rochester		T74LS33	SGS-Thomson			SN54AS1034A	◊† TI		
	54125	† Signetics		Quad 2-Input NOR (positive)				SN74AS1034A	TI		
	74125	Signetics		TTL-ALS M74ALS28A	Mitsubishi			TTL-F 54F365	† National		130
	SN54125	† TI		Quad 2-Input NOR (positive, open collector)				74F365	National		
	SN74125	TI		TTL-ALS M74ALS33A	Mitsubishi			54F365	† Signetics		
TTL-F	54F125	† National		Hex			75	54F367	† Signetics		
	74F125	National		TTL-LS T54LS365A	† SGS-Thomson			74F365	Signetics		
	74F125	◊ Signetics		T54LS367A	† SGS-Thomson			74F367	Signetics		
	SN74F125	TI		Hex, Buffer/Driver				74F367	Signetics		
TTL-LS	GD74LS125A	GoldStar		TTL ML5417	† Lansdale			TTL-LS GD74LS367A	GoldStar		135
	HD74LS125A	Hitachi		ML7417	Lansdale			HD74LS365A	Hitachi		
	SN54LS125A	† Motorola		Hex Buffer Driver, Gated Enable				HD74LS367A	Hitachi		
	SN74LS125A	Motorola		TTL-F MC54F365	◊† Motorola			SN54LS365A	† Motorola		
	DM54LS125A	† National		Hex Buffer Driver, Gated Enable, Inv.				SN54LS367A	† Motorola		
	DM74LS125A	National		TTL-F MC54F366	◊† Motorola			SN74LS367A	Motorola		
	54LS125A	† National		MC74F366	◊ Motorola			DM54LS365A	† National		
	74LS125	◊ National		Hex Buffer Driver, Gated Enable, Non-Inv.				DM54LS367A	† National		
	54LS125A	† SGS-Thomson		TTL-F MC74F365	◊ Motorola			DM74LS365A	National		
	74LS125A	SGS-Thomson		Hex Buffer/Driver, Non-Inverting, Open Collector				DM74LS367A	National		
	54LS125A	† Signetics		TTL-F 74F07	Signetics			54LS365	† National		
	74LS125A	Signetics		Hex Buffer Driver, 4/2-Bit, Inv.				54LS367	† National		
	SN54LS125A	◊† TI		TTL-F MC54F368	◊† Motorola			74LS365	National		145
	SN74LS125A	◊ TI		MC74F368	◊ Motorola			74LS367	National		
Quad Gated, Three-State (inverted control)				Hex Buffer Driver, 4/2-Bit, Non-Inv.				74LS365	Rochester		
TTL	54126	† Rochester		TTL-F MC54F367	◊† Motorola			74LS367	Rochester		
	74126	Rochester		Hex Buffer Driver, 4/2-Bit, Non-Inv.				T74LS365A	SGS-Thomson		150
	54126	† Signetics		TTL-F MC74F367	◊ Motorola			T74LS367A	SGS-Thomson		
	74126	Signetics		Hex Driver, Non-Inverting				54LS365	† SGS-Thomson		
	SN54126	† TI		TTL-AS DM74AS103A	National			54LS367	† SGS-Thomson		
	SN74126	TI		SN74AS1034A	TI			74LS365A	SGS-Thomson		
TTL-F	74F126	◊ Signetics		Hex, Inverting				74LS367A	SGS-Thomson		
	SN74F126	TI		TTL-ALS SN54ALS1005	◊† TI			54LS365A	† Signetics		155
TTL-LS	HD74LS126A	Hitachi		Hex, Non-Inverting				54LS367A	† Signetics		
	SN54LS126A	† Motorola		TTL-ALS SN74ALS34	◊ TI			74LS365A	Signetics		
	SN74LS126A	Motorola		TTL-AS DM74AS34	National			74LS367A	Signetics		
	DM74LS126	National		SN54AS34	◊† TI			SN54LS365A	◊† TI		160
	54LS126	† National		SN74AS34	◊ TI			SN74LS365A	TI		
	74LS126	◊ National		Hex, Open Collector				SN74LS367A	TI		
	54LS126	† SGS-Thomson		TTL ML5407	† Lansdale			TTL-S MC8T95	Motorola		165
	74LS126	SGS-Thomson		ML7407	Lansdale			MC8T97	Motorola		
	74LS126A	† Signetics		5407	† Rochester			N8T95	Signetics		
	74LS126A	Signetics		TTL-ALS M74ALS1035	Mitsubishi			N8T97	Signetics		
	SN54LS126A	◊† TI		DM74ALS1035	National			S8T97	† Signetics		
	SN74LS126A	◊ TI		SN54ALS1035	† TI			Octal			
Quad, Three State				SN74ALS1035	TI			TTL-LS T74LS240	SGS-Thomson		170
TTL-LS T74LS126A	SGS-Thomson		60	TTL-LS GD74LS07	GoldStar			T74LS241	SGS-Thomson		
				Hex, Open Collector, Non-Inverting				T74LS244	SGS-Thomson		
				TTL-ALS SN74ALS35A	TI			54LS240	† SGS-Thomson		
				Hex, Three-State				74LS240	SGS-Thomson		
				TTL DM54365	† National			74LS241	SGS-Thomson		
				DM54367	† National			74LS244	SGS-Thomson		
				DM74367	National			Octal Buffer			
				DM8095	National			TTL-LS T54LS240	† SGS-Thomson		175
								Octal Buffer/Driver, Inverting			
								TTL-ALS SN74ALS763	TI		
								Octal Buffer/Line Driver, Three-State, Non-Inverting			
								TTL-ALS M74ALS1244A	Mitsubishi		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL-TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Buffers (Cont'd)				Hex TTL (Cont'd)				Hex Inverter/Driver, Open Collector TTL-F 74F06 Signetics			
Octal Bus Driver, Inverting with Pull-Up Resistors				60				Hex, Open Collector			
TTL-ALS	SN74ALS746	TI		TTL				TTL	ML5405	† Lansdale	
SN74ALS746-1	TI			TTL-ALS					ML5406	† Lansdale	
Octal Bus Driver, Non-Inverting with Pull-Up Resistors				M74ALS04B					ML7405	Lansdale	135
TTL-ALS	SN74ALS747	TI		M74ALS05A					ML7406	Lansdale	
SN74ALS747-1	TI			M74ALS1004					DM5405	† National	
Octal, with Parity Generator-Checker				DM74ALS04					DM7405	National	
TTL-F	54F656	† Signetics	5	DM74ALS1004					7405	National	
74F656A	Signetics			74ALS04B					5406	† Rochester	140
SN74F455	TI			SN54ALS04B					7405	Rochester	
SN74F456	TI			SN54AS04					S8T90	† Signetics	
Octal, Three-State				SN74ALS04B					5405	† Signetics	
TTL-ALS	M74ALS465A	Mitsubishi		SN74ALS1004					7405	Signetics	
M74ALS467A	Mitsubishi			TTL-AS					SN5405	† TI	145
DM74ALS465	National			DM74AS1004					SN7405	TI	
DM74ALS467	National			SN54AS1004A					TTL-ALS		
SN74ALS465A	TI			SN74AS1004A					DM74ALS05	National	
SN74ALS467A	TI			TTL-F					DM74ALS1005	National	
TTL-LS				M74F04					SN54ALS05A	† TI	150
SN54LS795	† Motorola		15	M74F14					SN74ALS05A	° TI	
SN54LS796	† Motorola			MC54F04					SN74ALS1005	TI	
SN54LS797	† Motorola			MC54F14					TTL-H		
SN54LS798	† Motorola			MC74F04					54H05	† Rochester	
SN74LS795	Motorola			MC74F14					74H05	Rochester	
SN74LS796	Motorola			54F04					TTL-LS		
SN74LS797	Motorola			74F04					GD74LS05	GoldStar	155
SN74LS798	Motorola			54F04					GD74LS06	GoldStar	
DM81LS95	National			74F04					HD74LS05	Hitachi	
DM81LS97	National			SN54F04					SN54LS05	† Motorola	
SN74LS465	TI			SN74F04					SN74LS05	Motorola	
10-Bit Buffer/Line Driver, Inv.				TTL-H					DM54LS05	† National	160
TTL-F	MC54F828	† Motorola		ML3008					54LS05	† National	
MC74F828	° Motorola			ML3009					74LS05	° National	
10-Bit Buffer/Line Driver, Non-Inv.				ML3108					74LS05	Rochester	
TTL-F	MC54F827	† Motorola		ML3109					54LS05	† SGS-Thomson	165
MC74F827	° Motorola			RC3008					74LS05	SGS-Thomson	
10-Bit (bus interface)				RC3009					54LS05	† Signetics	
TTL-F	54F827	† National	30	RC3108					74LS05	Signetics	
74F827	° National			RC3109					SN54LS05	† TI	
74F827	° Signetics			74H04					SN74LS05	° TI	
TTL-S				TTL-L					TTL-S		
AM29827AC	AMD			54L04					DM74S05	National	170
AM29827C	AMD			GD74LS04					74S05	National	
AM29828A	° AMD			HD74LS04					74S05	Rochester	
AM29828C	AMD			SN54LS04					54S05	† Signetics	
Inverters				SN74LS04					74S05	Signetics	175
Dual Schmitt Trigger				DM54LS04					SN54S05	† TI	
TTL	ML5413	† Lansdale		DM74LS04					SN74S05	TI	
	ML7413	Lansdale		54LS04					Hex, Open-Collector		
	5413	† Rochester		74LS04					TTL-ALS	M74ALS1005	Mitsubishi
Dual 4-Input Schmitt Trigger				T54LS04					Hex Schmitt Trigger		
TTL-F	MC54F13	† Motorola	40	T54LS05A					TTL	ML5414	† Lansdale
MC74F13	Motorola			T54LS366A					ML7414	Lansdale	
TTL-LS				T54LS368A					5414	† Rochester	180
74LS13	SGS-Thomson			T74LS04					TTL-LS		
Quad 2-Input Schmitt Trigger				T74LS05A					T54LS14	† SGS-Thomson	
TTL-LS	T54LS132	† SGS-Thomson		54LS04					Hex Schmitt Trigger Inverter		
T74LS132	SGS-Thomson			74LS04					TTL-LS	T74LS14	SGS-Thomson
Hex				54LS04					Hex, Three-State		
TTL	ML5404	† Lansdale	45	74LS04					TTL	DM54368	† National
	ML7404	Lansdale		54LS04					DM74365	National	
	DM5404	† National		74LS04					DM74368	National	185
	DM7404	National		SN54LS04					DM8098	National	
	5404	† National		SN74LS04					54368	† Rochester	
	7404	National		TTL-S					54366A	† Signetics	
	5404	† Rochester		GD74S04					54368A	† Signetics	190
	7404	Rochester		DM54S04					74366	Signetics	
	5404	† Rochester		DM74S04					74368	Signetics	
	N8890	Signetics		74S04					SN54366A	† TI	
	N8891	Signetics		54S04					SN54368A	† TI	
	S8891	† Signetics		74S04					SN74366A	TI	195
	5404	† Signetics		SN54S04					SN74368A	TI	
	7404	Signetics		SN74S04					TTL-F		
	SN5404	† TI		Hex, Buffer/Driver					54F366	† National	
(Continued)				TTL					54F368	† National	
				ML5416					74F366	National	
				ML7416					74F368	National	
				5416					54F366	† Signetics	200
				130					(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Inverters (Cont'd)				Pi-Bus Transceiver, Octal Latched				Octal Buffer/Line Driver, Three-State, Complementary Inputs			
Hex, Three-State				54F776	† Signetics (3650)			TTL-ALS	SN74ALS231	Ti	
TTL-F				Test Mode Bus Transceiver, Three-State/Open Collector				TTL-AS	DM74AS231	National	
54F368	† Signetics			TTL-F	N74F777	Signetics			SN74AS231	Ti	
74F366	Signetics			Transceiver/Register				Octal Buffer/Line Driver, Three-State, Inverting			
74F368	Signetics			74F646A	Signetics (3655)			AM2958	AMD		115
				74F648A	Signetics (3655)			74FR2240	◊ National		
				74F651A	◊ Signetics (3656)			74FR240	National		
				74F652A	◊ Signetics (3656)						
				Dual Latch Transceiver with 8-Bit Parity				TTL-ALS	M74ALS1240A	Mitsubishi	
				Generator/Checker, Three-State				M74ALS240A	Mitsubishi		
				TTL-F	74F899	Signetics		M74ALS240A-1	Mitsubishi		
				Triple Bidirectional Latched Bus Transceiver,				DM74ALS240	National		120
				Three-State	54F777	Signetics (3651)		74ALS240A	Signetics		
				Quad Bidirectional Bus Transceiver, Three-State				74ALS240A-1	Signetics		
				TTL-LS	SN54LS442	† Ti		SN74ALS1240	Ti		
				SN74LS442	Ti			SN74ALS1240-1	Ti		125
				Quad Bus Transceiver				SN74ALS2240	Ti		
				TTL-F	54F2243	National					
				74F2243	National			TTL-AS	DM54AS240	† National	
				Quad Bus Transceiver, Open Collector				DM74ALS1240	National		
				TTL-AS	SN74AS758	Ti		DM74AS240	National		
				SN74AS759	Ti			SN54ALS240A	◊† Ti		130
				Quad Bus Transceiver, Three-State				SN54AS240	◊† Ti		
				TTL-ALS	SN74ALS758	Ti		SN74ALS240A	◊ Ti		
				Quad FutureBus Transceiver				SN74ALS240A-1	◊ Ti		
				TTL-F	74F3893	Signetics (3649)		SN74ALS240	◊ Ti		
				Hex 2-Input AND Driver				TTL-F	M74F240	Mitsubishi	
				TTL-AS	SN74AS808	Ti		MC74F240	Motorola		135
				TTL-F	74F1808	Signetics		54F240	◊† National		
				74F808	Signetics			74F240	◊ National		
				Hex 2-Input NAND Driver				54F240	† Signetics		
				TTL-F	74F1804	Signetics		74F1240	Signetics		
				74F804	Signetics			74F240	◊ Signetics		140
				Hex 2-Input NOR Driver				74F30240	◊ Signetics		
				TTL-F	74F1805	Signetics		SN54F240	† Ti		
				74F805	Signetics			SN74F240	◊ Ti		
				Hex 2-Input OR Driver				TTL-LS	GD74LS240	GoldStar	
				TTL-F	74F1832	Signetics		HD74LS240	Hitachi		145
				74F832	Signetics			SN54LS240	† Motorola		
				Octal Bidirectional Bus Transceiver, Three-State,				SN74LS240	Motorola		
				Inverting	AM7303	AMD		DM54LS240	† National		150
				AM7304B	AMD			54LS240	† National		
				AM8303	AMD			74LS240	◊ National		
				AM8304B	AMD			74LS240	Signetics		
				Octal Buffer/Line Driver, Three-State, True				SN54LS240	◊† Ti		
				TTL-S	AM25S244	† AMD		SN74LS240	◊ Ti		
				AM74S241	AMD			TTL-S	AM25S240	† AMD	155
				AM74S244	AMD			AM54S240	† AMD		
				Octal Buffer/Driver w/Parity				AM74S240	AMD		
				TTL-F	N74F455	Signetics		54LS240	† Signetics		
				Octal Buffer/Line Driver				54S240	† Signetics		160
				TTL-AS	SN54AS760	◊† Ti		74S240	Signetics		
				TTL-F	54F2240	National		SN54S240	† Ti		
				54F2241	◊† National			SN74S240	Ti		
				54F2244	◊† National			Octal Buffer/Line Driver, Three-State, Inverting (dual)			
				74F2240	National			TTL-ALS	DPLALS240Y	Dense-Pac	
				74F2241	◊ National			SN74ALS2540	Ti		
				74F2244	◊ National			SN74ALS540	◊ Ti		165
				Octal Buffer/Line Driver, Open Collector, True				SN74ALS540-1	◊ Ti		
				TTL-ALS	SN74ALS760	Ti		TTL-AS	DPLAS240Y	Dense-Pac	
				TTL-AS	SN74AS760	Ti		TTL-F	DPLF240Y	Dense-Pac	
				TTL-F	74F760	Signetics		DPLF540Y	Dense-Pac		
				Octal Buffer/Line Driver, Open-Collector, Inverting				54F540	† National		170
				TTL-ALS	SN74ALS756	◊ Ti		74F540	◊ National		
				SN74ALS756-1	◊ Ti			54F540	† Signetics		
				TTL-AS	SN74AS756	◊ Ti		74F540	◊ Signetics		
				TTL-F	74F756	Signetics		SN74F540	Ti		
				Octal Buffer/Line Driver, Open-Collector, True				TTL-LS	DPLLS240Y	Dense-Pac	175
				TTL-ALS	SN74ALS757	Ti		DPLLS540Y	Dense-Pac		
				TTL-AS	SN74AS757	◊ Ti		SN54LS540	† Motorola		
				TTL-F	74F757	Signetics		SN74LS540	Motorola		
				Octal Buffer/Line Driver, Open-Collector, True				74LS540	◊ National		
				TTL-ALS	SN74ALS757	Ti		T74LS540	SGS-Thomson		180
				TTL-AS	SN74AS757	◊ Ti		74LS540	Signetics		
				TTL-F	74F757	Signetics					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)				Octal Buffer/Line Driver, Three-State, True (Cont'd)				Octal Bus Transceiver, Open-Collector, True/Inverting (Cont'd)			
Octal Buffer/Line Driver, Three-State, Inverting (Data Flow-Thru Pinout)				TTL-LS				TTL-LS			
SN54LS540				*† TI				SN74LS644			
SN74LS540				° TI				SN74LS644-1			
Octal Buffer/Line Driver, Three-State, True				TTL-S				Octal Bus Transceiver, Open-Collector/Three-State, Inverting			
AM2959				AMD				TTL-ALS			
74FR244				National				SN74ALS638A			
								SN74ALS638A-1			
								SN74ALS639A			
								SN74ALS639A-1			
								TTL-AS			
								SN74AS638			
								SN74AS639			

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Bus-Oriented Circuits (Cont'd)				Octal Bus Transceiver with Direction Pin, Three-State, Inverting				Octal Bus Transceiver with 8-Bit Parity Generator/Checker, Three-State, True			
TTL-LS SN74LS651 * TI				TTL-LS SN74LS640 TI (Cont'd)				TTL-F 54F657 † Signetics			
TTL-LS SN74LS651 * TI				SN74LS640-1 TI				74F657 * Signetics			
TTL-LS SN74LS652 * TI				Octal Bus Transceiver with Register, Open Collector				Octal Bus Transceiver, Three-State Inputs/Outputs			
TTL-LS SN74LS652 * TI				TTL-ALS SN74ALS614-1 TI				TTL-F 54F545 † National			
Octal Bus Transceiver/Register, Three-State				Octal Bus Transceiver with Dual Enable, Open-Collector, True				54F545 † Signetics			
TTL-ALS DM54ALS651 † National				TTL-ALS M74ALS1621A Mitsubishi				74F545 Signetics			
DM74ALS651 National				M74ALS1622A Mitsubishi				Octal Bus Transceiver, Three-State, Inverting			
Octal Bus Transceiver/Register, Three-State/Open-Collector, Inverting				M74ALS621A Mitsubishi				TTL-ALS M74ALS1242A Mitsubishi			
TTL-ALS SN74ALS653 * TI				M74ALS622A Mitsubishi				DM74ALS1242 National			
TTL-ALS SN74ALS653-1 * TI				SN74ALS621A * TI				DM74ALS242 National			
TTL-ALS SN74ALS654 * TI				SN74ALS621A-1 * TI				SN54ALS242B * † TI			
TTL-ALS SN74ALS654-1 * TI				SN74ALS622A * TI				SN74ALS1242 TI			
TTL-F 74F653 * Signetics				SN74ALS622A-1 * TI				SN74ALS1242-1 TI			
TTL-F 74F654 * Signetics				TTL-AS SN74AS621 * TI				SN74ALS2242 TI			
Octal Bus Transceiver with Common Output Enable, Open-Collector, True				SN74AS622 * TI				SN74ALS242B * TI			
TTL-ALS M74ALS1641A Mitsubishi				TTL-F 74F621 * Signetics				SN74ALS242B-1 * TI			
M74ALS1642A Mitsubishi				74F622 * Signetics				TTL-AS DM74AS242 National			
M74ALS641A Mitsubishi				SN54F621 * † TI				SN54AS242 * † TI			
M74ALS642A Mitsubishi				SN74F621 * TI				SN74AS242 * TI			
SN74ALS641A TI				SN74F622 * TI				TTL-F MC54F242 † Motorola			
SN74ALS641A-1 TI				TTL-LS 54LS621 Signetics				MC74F242 Motorola			
SN74ALS642A TI				54LS622 Signetics				54F242 * † National			
SN74ALS642A-1 TI				74LS621 Signetics				54F2620 * † National			
TTL-AS SN74AS641 TI				74LS622 Signetics				54F2640 * † National			
SN74AS642 TI				Octal Bus Transceiver with Dual Enable, Three-State, Inverting				74F242 * † National			
TTL-F 74F641 Signetics				TTL-ALS M74ALS1620A Mitsubishi				74F2620 * National			
74F642 Signetics				M74ALS1623A Mitsubishi				74F2640 * National			
TTL-LS HD74LS641 Hitachi				M74ALS620A Mitsubishi				54F242 † Signetics			
HD74LS642 Hitachi				M74ALS620A-1 Mitsubishi				74F1242 Signetics			
SN54LS641 † Motorola				M74ALS623A Mitsubishi				74F242 * Signetics			
SN54LS642 † Motorola				M74ALS623A-1 Mitsubishi				SN54F242 * † TI			
SN74LS641 Motorola				74ALS620A Signetics				SN74F242 * TI			
SN74LS642 Motorola				74ALS620A-1 Signetics				TTL-LS HD74LS242 Hitachi			
54LS641 † Signetics				74ALS623A Signetics				SN54LS242 † Motorola			
74LS641 Signetics				74ALS623A-1 Signetics				SN74LS242 Motorola			
74LS641-1 Signetics				SN74ALS620A * TI				DM54LS242 † National			
74LS642 Signetics				SN74ALS620A-1 * TI				54LS242 Signetics			
74LS642-1 Signetics				SN74ALS623A TI				54S242 Signetics			
SN54LS641 * † TI				SN74ALS623A-1 * TI				74LS242 Signetics			
SN54LS642 * † TI				TTL-AS DM74AS2620 National				SN54LS242 * † TI			
SN74LS641 TI				DM74AS620 National				SN74LS242 * TI			
SN74LS641-1 TI				SN74AS2620 TI				Octal Bus Transceiver, Three-State, True			
SN74LS642 TI				SN74AS2623 TI				TTL-ALS M74ALS1243A Mitsubishi			
SN74LS642-1 TI				SN74AS620 * TI				M74ALS1245A Mitsubishi			
Octal Bus Transceiver with Direction Pin, Three-State, Inverting				SN74AS623 * TI				M74ALS1645A Mitsubishi			
TTL-ALS M74ALS1640A Mitsubishi				TTL-F MC74F620 Motorola				M74ALS243A Mitsubishi			
M74ALS640A Mitsubishi				MC74F623 Motorola				M74ALS245A Mitsubishi			
M74ALS640A-1 Mitsubishi				54F620 * † National				M74ALS245A-1 Mitsubishi			
DM74ALS640 National				54F623 * † National				M74ALS245A-1 Mitsubishi			
SN54ALS640A † TI				74F620 * National				DM74ALS1243 National			
SN74ALS1640A TI				74F623 * National				DM74ALS243 National			
SN74ALS1640A-1 TI				54F620 † Signetics				DM74ALS245 National			
SN74ALS640A TI				74F620 * Signetics				DM74ALS645 National			
SN74ALS640A-1 TI				74F623 * Signetics				74ALS245A Signetics			
TTL-AS DPLAS640Y Dense-Pac				SN54F620 * † TI				74ALS245A-1 Signetics			
DM74AS640 National				SN54F623 * † TI				74ALS645A Signetics			
SN54AS640 † TI				SN74F620 * TI				74ALS645A-1 Signetics			
SN74AS2640 TI				SN74F623 * TI				SN54ALS1245A † TI			
SN74AS640 TI				TTL-LS SN54LS623 † Motorola				SN54ALS243A * † TI			
TTL-F MC74F640 Motorola				SN74LS623 Motorola				SN54ALS245A * † TI			
74F640 Signetics				74LS623 Rochester				SN54ALS645A † TI			
TTL-LS DPLLS640Y Dense-Pac				54LS620 Signetics				SN74ALS1245A TI			
SN54LS640 † Motorola				54LS623 † Signetics				SN74ALS1245A-1 TI			
SN74LS640 Motorola				74LS620 Signetics				SN74ALS1645A TI			
74LS640 Signetics				74LS623 Signetics				SN74ALS1645A-1 TI			
SN54LS640 * † TI				Octal Bus Transceiver with 8-Bit Parity Generator/Checker, Three-State, True				SN74ALS243A * TI			
Octal Bus Transceiver with 8-Bit Parity Generator/Checker, Three-State, True				TTL-F 54F657 † National				SN74ALS243A-1 * TI			
TTL-F 54F657 † National				74F657 National				SN74ALS245A * TI			
74F657 National				Octal Bus Transceiver with 8-Bit Parity Generator/Checker, Three-State, True				SN74ALS245A-1 * TI			
74F657 National				TTL-F 54F657 † National				SN74ALS645A TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F657 National				SN74ALS645A-1 TI			
74F657 National				74F65							

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Bus-Oriented Circuits (Cont'd)													
Octal Bus Transceiver, Three-State, True (Cont'd)				Octal Bus Transceiver, Three-State, True (dual)				9-Bit Bus Transceiver, Three-State, True					
TTL-AS	DM74AS243	National	5	TTL-ALS	DPLALS245Y	Dense-Pac	75	TTL-ALS	SN74ALS29863	* TI	120		
	DM74AS245	National		TTL-AS	DPLAS245Y	Dense-Pac		TTL-F	74F863	Signetics			
	DM74AS645	National		TTL-F	DPLF245Y	Dense-Pac		TTL-LS	AM29863C	AMD			
	SN54AS245	*† TI		TTL-LS	DPLLS245Y	Dense-Pac		10-Bit Buffer/Line Driver, Three-State, Inverting					
	SN54AS645	† TI		Octal Bus Transceiver, Three-State, True/Inverting				BCT	SN54BCT29828	† TI			
	SN74AS243	* TI		TTL-ALS	M74ALS1643A	Mitsubishi		10-Bit Bus Interface D-Type Latch					
	SN74AS245	* TI			M74ALS643A	Mitsubishi		TTL-ALS	SN54ALS29842	† TI			
	SN74AS2645	TI			SN74ALS643A	TI		10-Bit Bus Interface Flip-Flop					
	SN74AS645	TI			SN74ALS643A-1	TI		TTL-ALS	SN54ALS29821	† TI	125		
								SN54ALS29822	† TI				
				TTL-AS			80	10-Bit Bus Interface Register, Three-State, Inverting					
TTL-F	M74F245	Mitsubishi	10	Octal Bus Transceiver with Parity				TTL-ALS	SN74ALS29822	TI			
	MC54F243	† Motorola		TTL-F	MC54F657A	† Motorola		10-Bit Bus Transceiver, Three-State, Inverting					
	MC54F245	† Motorola			MC54F657B	† Motorola		TTL-ALS	SN74ALS29862	TI			
	MC74F243	Motorola		Octal Bus Transceiver with Parity				TTL-F	74F862	Signetics			
	MC74F245	Motorola		TTL-F	MC74F657A	† Motorola		10-Bit Bus Transceiver, Three-State, True					
	54F243	† National			MC74F657B	† Motorola		TTL	AM29861AC	AMD	130		
	54F245	† National		Octal Inverting Bus Transceiver, Three-State				TTL-ALS	SN74ALS29861	* TI			
	54F2623	† National		TTL-ALS	DM74ALS648	National		TTL-F	74F861	Signetics			
	54F2643	† National			DM74ALS648-1	National		9-Bit Bus Transceiver with Registered 8-Bit Parity Error, Open-Collector					
	54F2645	† National		Octal Latched Transceiver, Three-State			85	TTL-F	74F8960	* Signetics			
	74F243	† National			74FR543	National			74F8961	* Signetics			
	74F245	† National		Octal Register Transceiver, True, Three-State				Counters, Binary					
	74F2623	† National		TTL-F	MC74F543	† Motorola		8-Bit Bidirectional					
	74F2643	† National		Octal Register, Three-State, Inverting			90	TTL-F	MC54F269	† Motorola	135		
	74F2645	† National		TTL-S	AM25S534	† AMD		8-Bit Bidirectional, Three-State					
	54F243	† Signetics			AM54S534	† AMD		TTL-F	MC74F579	† Motorola			
	54F245	*† Signetics			AM74S534	† AMD			MC74F779	† Motorola			
	74F1243	Signetics		Octal Register, Three-State, True				Counters, Binary Count Up					
	74F1245	Signetics		TTL-S	AM25S374	† AMD		Counter/Latch (divide-by-2, 4, 8, 16), Preset Input					
	74F243	† Signetics			AM54S374	† AMD		TTL	74197	National	140		
	74F245	* Signetics			AM74S374	AMD			74177	Rochester			
	74F30245	* Signetics		Octal Registered Transceiver with Dual Enable, Three-State, True			100		74197	Rochester			
	SN54F243	*† TI		TTL-F	54F543	*† National			SN54177	† TI			
	SN54F245	*† TI			54F544	*† National			SN54197	† TI			
	SN74F243	* TI			74F543	*† National			SN74177	TI			
	SN74F245	* TI			74F544	*† National			SN74197	TI			
					74F543	* Signetics		TTL-LS	SN54LS197	† Motorola	145		
TTL-LS	GD74LS245	GoldStar	40		74F544	* Signetics			SN74LS197	Motorola			
	HD74LS243	Hitachi			74F543	* Signetics			74LS197	National			
	HD74LS245	Hitachi			74F544	* Signetics			74LS197	SGS-Thomson			
	HD74LS645	Hitachi			74F543	* Signetics			54LS197	† Signetics			
	SN54LS243	† Motorola			74F544	* Signetics			74LS197	Signetics			
	SN54LS245	† Motorola			SN54F543	*† TI			SN54LS197	† TI			
	SN54LS645	† Motorola			SN54F544	*† TI			SN74LS197	TI			
	SN74LS243	Motorola			SN74F543	* TI		TTL-S	SN54S197	† TI	150		
	SN74LS245	Motorola			SN74F544	* TI			SN74S197	TI			
	SN74LS645	Motorola		Octal Registered Transceiver, Three-State, Inverting				Counter/Register with Multiplexed Output, Three-State					
	DM54LS243	† National		TTL-F	74F2953	Signetics	110	TTL-LS	SN54LS691	† TI			
	DM54LS245	† National		Octal Registered Transceiver, Three-State, True					SN54LS693	† TI			
	DM74LS243	National		TTL-F	74F2952	Signetics		Divide by 12					
	DM74LS245	National		Octal Transceiver/Register				TTL	ML5492A	† Lansdale			
	54LS245	† National		TTL-F	N74F646A	Signetics			ML7492A	Lansdale			
	74LS245	† National			N74F648A	Signetics			7492	Rochester			
	74LS245	† National		Octal Transceiver/Register, Inverting, Three-State				Modulo-16					
	74LS245	† National		TTL-F	N74F651A	* Signetics		TTL-LS	T54LS293	† SGS-Thomson			
	74LS245	† National		Octal Transceiver/Register, True, Three-State				Modulo-16 Binary Counter					
	74LS245	† National		TTL-F	N74F652A	* Signetics	115	TTL-LS	74LS169	SGS-Thomson			
	74LS245	† National		8-Bit Bus Interface Flip-Flop				Synchronous (both conventional and three-state outputs) Preset Input					
	74LS245	† National		TTL-ALS	SN54ALS29825	† TI		TTL	DM7556	National	165		
	74LS245	† National		8-Bit Bus Interface Register, Three-State, True					DM8556	National			
	74LS245	† National		TTL-ALS	SN74ALS29825	TI			7556	Rochester			
	74LS245	† National		9-Bit Bus Interface D-Type Latch				Synchronous, Preset Input (asynchronous clear)					
	74LS245	† National			TTL-ALS	SN54ALS29843		† TI	TTL	DM54161A		† National	
	74LS245	† National		9-Bit Bus Interface Flip-Flop					DM74161A	National			
	74LS245	† National		TTL-ALS	SN54ALS29823	† TI		DM8316	† National				
	74LS245	† National			SN54ALS29824	† TI		DM9316	National				
	74LS245	† National		9-Bit Bus Interface Register, Three-State, Inverting			70	(Continued)					
	74LS245	† National		TTL-ALS	SN74ALS29824	TI							
	74LS245	† National		9-Bit Bus Transceiver, Three-State, Inverting									
	74LS245	† National		TTL-ALS	SN74ALS29864	TI							
	74LS245	† National		TTL-F	74F864	* Signetics							
	74LS245	† National											
	74LS245	† National											
	74LS245	† National											
	74LS245	† National											
	74LS245	† National											
	74LS245	† National											

† Mil Temp Range (–55° to 125°C)

* High Rad Resistance

* Typical Value

* Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Counters, Binary Count Up (Cont'd)				Synchronous Up/Down 4-Bit Binary Counter				4-Bit Binary			
Synchronous, Preset Input (asynchronous clear)				TTL				TTL			
TTL				ML54191				ML5493A			
54161				ML54193				ML7493A			
74161				ML74191				TTL-ALS SN74ALS561A			
9316C				ML74193				TTL			
9316M				Synchronous 4-Bit				4-Bit Binary Counter			
74161				TTL				TTL			
N9316				ML54163				ML54293			
54161				ML74163				ML74293			
SN54161				TTL-ALS SN54ALS561				4-Bit Binary Counter, Asynchronous Reset			
SN74161				TTL				TTL-ALS 74ALS161B			
TTL-ALS DM74ALS161				Synchronous 4-Bit Counter				4-Bit Binary Counter/Latch			
SN54ALS161B				TTL				TTL			
SN74ALS161B				ML54161				ML54197			
TTL-AS DM74AS161				Synchronous 4-Bit Binary Counter				ML74197			
DM74AS162				TTL				54197			
SN54AS161				Synchronous 6-Bit Binary Rate Multiplier				4-Bit Binary Counter/Latch, Presettable			
SN74AS161				TTL				TTL			
TTL-F MC74F161A				ML54177				ML54177			
54F161A				ML7497				54177			
74F161A				Dual 4-Bit Ripple Counter				4-Bit Binary Counter, Synchronous Reset			
74F161A				TTL-F N74F393				TTL-ALS 74ALS163B			
SN54F161A				Dual 4-Bit, Ripple (dual 54/7493A)				4-Bit Binary with Asynchronous Reset			
SN74F161A				TTL				TTL-F M74F161A			
TTL-LS GD74LS161A				SN54393				4-Bit Binary with Synchronous Reset			
HD74LS161A				SN74393				TTL-F M74F163A			
SN54LS161A				TTL-LS GD74LS393				4-Stage Ripple Counter			
SN74LS161A				HD74LS393				TTL-LS T74LS196			
DM54LS161A				SN54LS393				T74LS197			
DM74LS161A				SN74LS393				8-Bit Synchronous			
54LS161				DM74LS393				TTL-ALS SN74ALS8161			
74LS161				74LS393				TTL-LS SN54LS461			
54LS161A				T54LS393				SN74LS461			
74LS161A				74LS393				DM74LS461			
SN54LS161A				SN54LS393				8-Bit with Input Registers			
SN74LS161A				SN74LS393				TTL-LS SN54LS592			
TTL-S 93S16				Dual 4-Stage				SN54LS593			
Synchronous, Preset Input (synchronous clear)				TTL-LS 74LS393				SN74LS592			
TTL				4-Bit, Ripple				8-Bit with Output Registers			
DM54163				TTL				TTL-LS SN54LS590			
DM74163				DM5493A				SN74LS590			
74163				DM7493A				SN74LS591			
74163				7493				Counters, Binary Count Up/Down			
54163				5493				Counter/Register with Multiplexed Three-State Output			
SN54163				74293				TTL-LS SN54LS697			
SN74163				7493A				SN54LS699			
TTL-ALS M74ALS163B				5493				SN74LS697			
DM74ALS163				7493				SN74LS699			
SN54ALS163B				SN54293				Divide by 16 Counter			
SN74ALS163B				SN5493A				TTL-LS T54LS93			
TTL-AS DM74AS163				SN74293				Presettable BCD/Decade Up/Down Counter			
SN54AS163				SN7493A				TTL-LS T54LS192			
SN74AS163				TDS050A				Synchronous			
TTL-F MC74F163A				TTL-LS GD74LS93				TTL-ALS SN54AS867			
54F163A				HD74LS293				SN54AS869			
74F163A				HD74LS93				SN74AS867			
74F163A				SN54LS293				SN74AS869			
SN54F163A				SN74LS293				TTL-F 54F569			
SN74F163A				SN74LS93				54F579			
TTL-LS GD74LS163A				DM74LS293				54F779			
HD74LS163A				74LS293				74F569			
SN54LS163A				54L93				74F579			
SN74LS163A				74LS93				74F779			
DM54LS163A				74LS93B1				74F779			
DM74LS163A				54LS293				SN74F569			
54LS163A				54LS93				Synchronous, Parallel load			
74LS163				74LS293				TTL-ALS M74ALS169B			
54LS163A				74LS93				DM74ALS169			
SN54LS163A				SN54LS293				SN54ALS169B			
SN74LS163A				SN54LS93				SN74ALS169B			
TTL-S SN54S163				SN74LS293				(Continued)			
SN74S163				SN74LS93							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Counters, Binary Count Up/Down (Cont'd)				Synchronous, Preset Input (2 clocks)				Synchronous Decade Decimal Rate Multiplier			
Synchronous, Preset Input, Mode Control, Look-Ahead Carry (Cont'd)				TTL (Cont'd)				TTL			
TTL-AS	DM74AS169	National	5	DM7563	† National	70	125	ML54167	† Lansdale	125	
	SN54AS169A	*† TI		DM8563	National			ML74167	Lansdale		
	SN74AS169	* TI		54193	† Rochester						
				74193	Rochester						
				54193	† Signetics						
TTL-F	MC54F169	† Motorola	10	74193	Signetics	75	130			130	
	MC74F169	Motorola		SN54193	† TI						
	54F169	*† National		SN74193	TI						
	54F269	† National									
	74F169	° National									
	74F269	National	15	TTL-ALS	M74ALS193	Mitsubishi	80			135	
	54F269	† Signetics		SN54ALS193	*† TI						
	74F169	° Signetics		SN74ALS193	° TI						
	74F269	Signetics									
	SN54F169	*† TI									
	SN74F169	* TI	20	TTL-F	54F193	°*† National	85			140	
TTL-LS	SN54LS169	† Motorola		74F193	° National						
	SN74LS169	Motorola		74F193	° Signetics						
	DM54LS169A	† National		SN74F193	TI						
	DM74LS169A	National									
	54LS169	† National	25	TTL-L	54L193	† Rochester	90			145	
	74LS169	National		TTL-LS	HD74LS193	Hitachi					
	74LS169	Rochester		SN54LS193	† Motorola						
	T54LS169	† SGS-Thomson		SN74LS193	Motorola						
	T74LS169	SGS-Thomson		DM54LS193	† National						
	54LS169A	† Signetics	30	DM74LS193	National	95	150			155	
	74LS169A	Signetics		54LS193	† National						
	SN54LS169B	°*† TI		54LS193	† SGS-Thomson						
	SN54LS669	°† TI		74LS193	SGS-Thomson						
	SN74LS169B	* TI		54LS193	Signetics						
	SN74LS669	TI	35	SN54LS193	°*† TI	100	160			165	
TTL-S	54S169A	Signetics		SN74LS193	° TI						
	SN54S169	† TI									
	SN74S169	TI									
Synchronous, Preset Input with Mode Control				Synchronous with Mode Control				4-Bit Synchronous			
TTL	DM54191	† National	40	TTL	S8284	† Signetics	105	TTL-S	AM54S161	† AMD	170
	DM74191	National						AM54S163	† AMD		
	54191	† National						AM74S161	AMD		
	74191	National						AM74S163	AMD		
	74191	Rochester									
	54191	† Signetics	45	Up/Down Binary Counter							175
	SN54191	† TI		TTL-F	M74F169	° Mitsubishi	110				
	SN74191	TI		TTL-LS	T54LS193	† SGS-Thomson					
TTL-ALS	M74ALS191	Mitsubishi									
	SN54ALS191	*† TI									
	SN74ALS191	* TI	50								
TTL-F	54F191	*† National		4-Bit Asynchronous Presettable							180
	74F191	° National		TTL-ALS	74ALS191	Signetics	115				
	74F191	° Signetics									
	SN74F191	TI									
TTL-LS	HD74LS191	Hitachi	55							185	
	SN54LS191	† Motorola									
	SN74LS191	Motorola									
	DM54LS191	† National									
	DM74LS191	National									
	74LS191	National	60							190	
	74LS191	SGS-Thomson									
	54LS191	† Signetics									
	74LS191	Signetics									
	SN54LS191	°*† TI									
	SN74LS191	* TI	65							195	
Synchronous, Preset Input, Three-State											
TTL-ALS	SN54ALS569A	*† TI									
	SN74ALS569A	* TI									
TTL-LS	AM25LS2569C	AMD									
	AM25LS2569M	† AMD									
	SN54LS569	† Motorola	70							200	
	SN74LS569	Motorola									
	74LS569A	Signetics									
Synchronous, Preset Input (2 clocks)										205	
TTL	DM54193	† National	75								
	DM74193	National									
Counters, Decade										210	
Synchronous, Presettable, Three-State											
TTL-ALS	M74ALS560A	Mitsubishi	80								
Synchronous Up/Down Decade Counter										215	
TTL	ML54190	† Lansdale	85								
	ML54192	† Lansdale									
	ML74190	Lansdale									
	ML74192	Lansdale									
	54190	† Rochester									
Synchronous Decade Counter										220	
TTL	ML54152	Lansdale	90								
	ML54160	† Lansdale									
	ML54162	† Lansdale									
	ML74160	Lansdale									
	ML74162	Lansdale									
	54162	† Rochester	95							225	
Counters, Decade Count Up										230	
Divide-by-2 and by-5											
TTL	DM5490	† National	100								
	DM7490	National									
	5490	† National									
	7490	National									
	5490	† Rochester									
	7490	Signetics	105							235	
	SN54290	† TI									
	SN5490A	† TI									
	TD3501A	Toshiba									
TTL-LS	HD74LS290	Hitachi	110							240	
	HD74LS90	Hitachi									
	SN54LS290	† Motorola									
	SN54LS90	† Motorola									
	SN74LS290	Motorola									
	SN74LS90	Motorola	115							245	
	DM74LS290	National									
	DM74LS90	National									
	74LS290	° National									
	774LS90B1	SGS-Thomson									
	54LS290	† SGS-Thomson	120							250	
	74LS90	SGS-Thomson									
	54LS290	† Signetics									
	54LS90	† Signetics									
	74LS290	Signetics									
	SN54LS290	°† TI	125							255	
	SN5										

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Counters, Decade Count Up (Cont'd)				Dual, Ripple (dual 54/7490A) TTL-LS				Synchronous, Preset Input (2 clocks) TTL-F				
(Divide-by-2 and divide-by-5) Counter/Latch, Ripple, Preset Input				(Cont'd)				(Cont'd)				
TTL	SN74176	TI		SN74LS390	Motorola			74F192	* Signetics			
	SN74196	TI		SN74LS490	Motorola			SN74F192	TI			
TTL-LS	SN54LS196	† Motorola		DM74LS390	National			TTL-L	54L192	† Rochester		
	SN74LS196	Motorola		54LS490	† National			TTL-LS	HD74LS192	Hitachi		
	74LS196	National		74LS490	† National				SN54LS192	† Motorola		
	74LS196	SGS-Thomson		T54LS390	† SGS-Thomson				SN74LS192	Motorola		
	SN54LS196	† TI		T54LS490	† SGS-Thomson				54LS192	† National		
	SN74LS196	TI		T74LS390	SGS-Thomson				74LS192	† National		
TTL-S	SN54S196	† TI		T74LS490	SGS-Thomson				54LS192	† SGS-Thomson		
	SN74S196	TI		54LS390	† Signetics				74LS192	SGS-Thomson		
Synchronous, Preset Input (asynchronous clear)				54LS490	† Signetics				54LS192	† Signetics		
TTL	74160	Rochester		74LS390	* Signetics				74LS192	Signetics		
	9310	Rochester		74LS490	* Signetics				SN54LS192	† TI		
	N9310	Signetics		74LS390	* TI				SN74LS192	* TI		
	54160	† Signetics		74LS490	* TI			Synchronous, Preset, with Mode Control				
	SN54160	† TI		74LS390	* TI			TTL	74190	Rochester		
	SN74160	TI		74LS490	* TI				54190	† Signetics		
TTL-ALS	DM74ALS160	National		74LS390	* TI				SN54190	† TI		
	SN74ALS160B	* TI		74LS490	* TI				SN74190	TI		
TTL-AS	DM74AS160	National		74LS390	* TI			TTL-ALS	M74ALS190	Mitsubishi		
	SN74AS160	* TI		74LS490	* TI				SN74ALS190	* TI		
TTL-F	MC74F160A	Motorola		74LS390	* TI			TTL-F	54F190	*† National		
	54F160A	*† National		74LS490	* TI				74F190	* National		
	74F160A	* National		74LS390	* TI				74F190	* Signetics		
	74F160A	* Signetics		74LS490	* TI				SN74F190	TI		
	SN54F160A	*† TI		74LS390	* TI			TTL-LS	HD74LS190	Hitachi		
	SN74F160A	* TI		74LS490	* TI				SN54LS190	† Motorola		
TTL-LS	HD74LS160A	Hitachi		74LS390	* TI				SN74LS190	Motorola		
	SN54LS160A	† Motorola		74LS490	* TI				DM54LS190	† National		
	SN74LS160A	Motorola		74LS390	* TI				DM74LS190	National		
	54LS160A	† National		74LS490	* TI				74LS190	National		
	74LS160	National		74LS390	* TI				74LS190	SGS-Thomson		
	54LS160A	† Signetics		74LS490	* TI				54LS190	† Signetics		
	74LS160A	Signetics		74LS390	* TI				SN54LS190	*† TI		
	SN54LS160A	*† TI		74LS490	* TI				SN74LS190	* TI		
	SN74LS160A	* TI		74LS390	* TI			BCD/Decade Up/Down Counter				
Synchronous, Preset Input (synchronous clear)				74LS390	* TI			TTL-LS	T74LS190	SGS-Thomson		
TTL	74162	Rochester		74LS490	* TI				T74LS192	SGS-Thomson		
	SN54162	† TI		74LS390	* TI			Four Counter/Latch/Display Driver (synchronous, BCD and segment drives)				
TTL-ALS	DM74ALS162	National		74LS490	* TI			TTL	ZN1040E-RED	GEC Plessey		
	SN54ALS162B	*† TI		74LS390	* TI			Counters, Miscellaneous				
	SN74ALS162B	* TI		74LS490	* TI			Divide-by-4				
TTL-AS	SN74AS162	* TI		74LS390	* TI			TTL	TD6100	Toshiba		
TTL-F	MC74F162A	Motorola		74LS490	* TI			Divide-by-12 (divide by 2 and 6), Ripple				
	54F162A	*† National		74LS390	* TI			TTL	DM5492A	† National		
	74F162A	* National										

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Counters, Miscellaneous (Cont'd)				BCD-to-Decimal (1 of 10)				Dual 2-Line to 4-Line Decoder/Demultiplexer, Totem Pole Output (or 3-line to 8-line decoder/demultiplexer)			
4-Bit	TTL-LS T74LS293	SGS-Thomson		TTL-LS	SN74LS42	Motorola		TTL-LS	SN74LS155	Motorola	
8-Bit Binary Counter/Latch	TTL-LS SN74LS593	TI		DM54LS42	† National		55	SN74LS156	Motorola		
10-Bit Up/Down (provides CRT vertical and horizontal timing generation)	TTL-LS SN54LS491	† AMD		DM74LS42	† National		60	DM54LS139	† National	120	
	SN74LS491	AMD		74LS42	◊ National			DM54LS155	† National		
16-Bit Programmable Modulo	TTL-LS SN74LS294	TI	5	74LS42	Rochester			DM54LS156	† National		
32-Bit Programmable Modulo	TTL-LS SN74LS292	TI		54LS42	† SGS-Thomson			DM74LS139	National		
				74LS42	† SGS-Thomson			DM74LS155	National		
				54LS42	† Signetics			DM74LS156	National		
				SN54LS42	◊† TI		65	54LS139	† National	125	
				SN74LS42	TI			54LS155	† National		
				TTL-S N82S52	Signetics			54LS156	† National		
				BCD-to-Decimal (1 of 10), Three-State				74LS139	◊ National		
				TTL-F 54F537	† National			74LS155	◊ National		
				74F537	◊ National			74LS156	◊ National		
				74F537	Signetics			54LS139	† SGS-Thomson	130	
				BCD-to-Decimal (1 of 8)	TTL 9302	Rochester		54LS155	† SGS-Thomson		
				BCD-to-7 Segment Decoder	TTL-LS SN54LS249	◊† TI	70	54LS156	† SGS-Thomson	135	
				Dual 1 of 4 Decoder/Demultiplexer	TTL-F M74F139	Mitsubishi		74LS139	SGS-Thomson		
				Dual 1-of-4 Decoder	TTL-LS T54LS139	† SGS-Thomson		74LS155	SGS-Thomson		
					T74LS139	SGS-Thomson		74LS156	SGS-Thomson		
				Dual 1-of-4 Decoder/Demultiplexer	TTL-ALS 74ALS139	Signetics		54LS139	† Signetics		
				TTL-LS T54LS155	† SGS-Thomson		75	54LS155	† Signetics	140	
				T54LS156	† SGS-Thomson			54LS156	† Signetics		
				T74LS155	SGS-Thomson			74LS139	Signetics		
				T74LS156	SGS-Thomson			74LS155	Signetics		
				Dual 1-of-4 Decoder/Demultiplexer (independent address)	TTL 9321C	National		74LS156	Signetics		
					9321M	† National	80	SN54LS139A	◊† TI		
				Dual 1-of-4 Decoder, Three-State	TTL-F MC54F539	† Motorola		SN54LS155A	◊† TI		
					MC74F539	Motorola		SN54LS156	◊† TI		
				Dual 2-Line to 4-Line Decoder/Demultiplexer				SN74LS139A	◊† TI	145	
				TTL ML54155	† Lansdale			SN74LS155A	TI		
				ML74155	Lansdale			SN74LS156	TI		
				DM54155	† National	85		DM54S139	† National		
				DM74155	National			DM74S139	National	150	
				74155	National			74S139	National		
				54155	† Rochester			54S139	† Rochester		
				54156	Rochester			74S139	Rochester		
				74156	Rochester			54S139	† Signetics	155	
				54155	Signetics			74S139	Signetics		
				54156	† Signetics			SN54S139	† TI		
				SN54155	† TI			SN74S139	◊† TI		
				SN54156	† TI			Dual 2-Line to 4-Line Decoder/Multiplexer	TTL-ALS SN54ALS139	†† TI	
				SN74155	TI			Dual 2-Line to 4-Line Decoder/Demultiplexer with Open-Collector Outputs	TTL-ALS SN74ALS156	TI	
				SN74156	TI			One-of-Ten Decoder/Demultiplexer, Three-State	MC74F537	Motorola	
				TTL-ALS SN74ALS155	TI				MC54F537	† Motorola	160
				TTL-AS SN74ALS139	◊† TI			1 of 10 Decoder	TTL-LS T74LS42	SGS-Thomson	
				TTL-F MC54F139	† Motorola			1 of 8 Decoder/Demultiplexer	TTL-ALS M74ALS138	Mitsubishi	
				MC74F139	Motorola				TTL-F M74F138	Mitsubishi	
				54F139	◊† National			1 of 8 Decoder/Demultiplexer with Address Latch	TTL-ALS M74ALS137	Mitsubishi	
				54F539	† National			1-Line to 8-Line Decoder/Demultiplexer			
				74F139	◊ National				54F547	† National	165
				74F539	◊ National				54F548	◊† National	
				54F139	† Signetics				74F547	◊ National	
				74F139	◊ Signetics		105		74F548	◊ National	
				74F539	Signetics				74F547	Signetics	170
				TTL-LS GD74LS139	GoldStar				74F548	Signetics	
				HD74LS139	Hitachi			1-of-8 Decoder/Demultiplexer	TTL-ALS 74ALS138	Signetics	
				HD74LS155	Hitachi			1-of-8 Decoder, Three-State	AM2921	AMD	
				HD74LS156	Hitachi			1-of-10 Decoder	TTL-LS T54LS42	† SGS-Thomson	
				SN54LS139	† Motorola		110	3-Line to 8-Line Decoder/Demultiplexer	TTL-ALS M74ALS131	Mitsubishi	
				SN54LS155	† Motorola				DM74ALS138	National	175
				SN54LS156	† Motorola						(Continued)
				SN74LS139	Motorola		115				(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Decoders (Cont'd)				4-Line to 16-Line Decoder/Demultiplexer (Cont'd)									
3-Line to 8-Line Decoder/Demultiplexer (Cont'd)								Delay Line Module, 3-Tap (30,40,50 ns)					
TTL-ALS	SN54ALS138	*† TI	5	TTL-ALS	SN74ALS154	TI	65	STTLDL050	Technitrol	105			
	SN74ALS138	* TI		TTL-L	54L154	† Rochester		Delay Line Module, 3-Tap (45,60,75 ns)	STTLDL075		Technitrol		
TTL-AS	SN54AS138	*† TI	10	TTL-LS	GD74LS154	GoldStar	70	Delay Line Module, 3-Tap (60,80,100 ns)	STTLDL100	Technitrol			
	SN74AS138	* TI			HD74LS154	Hitachi		Delay Line Module, 3-Tap (75,100,125 ns)	STTLDL125	Technitrol			
TTL-F	MC54F138	† Motorola	15		DM54LS154	† National	75	Delay Line Module, 3-Tap (90,120,150 ns)	STTLDL150	Technitrol			
	MC74F138	Motorola			DM74LS154	National		Delay Line Module, 5-Tap (10 to 50 ns)	HTTLDL050	Technitrol			
	54F138	◊*† National	20		54LS154	† Signetics	80	HTTLDL050	Technitrol	110			
	74F138	◊* National			74LS154	Signetics		Delay Line Module, 5-Tap (100 to 500 ns)	HTTLDL500		Technitrol		
	74F138	* Signetics	25	Delay Lines				TEC	Technitrol	115			
	SN54F138	◊*† TI		Delay Line Module, Two Separate Delays (10 ns each)				HTTLDL050	Technitrol				
	SN74F138	◊* TI	30	TTL2S010				LTTLDL050	Technitrol	120			
TTL-LS	GD74LS138	GoldStar		Delay Line Module, Two Separate Delays (100 ns each)				HTTLDL500	Technitrol				
	HD74LS138	Hitachi	35	TTL2S100				Delay Line Module, 5-Tap (100,200,300,400,500 ns)	TTLDL500	Technitrol			
	SN54LS138	† Motorola		Delay Line Module, Two Separate Delays (110 ns each)				Delay Line Module, 5-Tap (10,20,30,40,50 ns)	BTTLDL050	Technitrol			
	SN74LS138	Motorola	40	TTL2S110				TTLDL050	Technitrol	125			
	DM54LS138	† National		Delay Line Module, Two Separate Delays (15 ns each)				Delay Line Module, 5-Tap (15 to 75 ns)	HTTLDL075		Technitrol		
	DM74LS138	National	45	TTL2S015				HTTLDL075	Technitrol	130			
	54LS138	† National		Delay Line Module, Two Separate Delays (20 ns each)				LTTLDL075	Technitrol				
	74LS138	◊ National	50	TTL2S020				Delay Line Module, 5-Tap (15,30,45,60,75 ns)	BTTLDL075	Technitrol			
	T54LS138	† SGS-Thomson		TTL2S050				TTLDL075	Technitrol	135			
	774LS138	SGS-Thomson	55	Delay Line Module, Two Separate Delays (50 ns each)				Delay Line Module, 5-Tap (20 to 100 ns)	HTTLDL100		Technitrol		
	54LS138	† SGS-Thomson		TTL2S010				LTTLDL100	Technitrol	140			
	74LS138	SGS-Thomson	60	Delay Line Module, Three Separate Delays (10 ns each)				HTTLDL100	Technitrol				
	54LS138	† Signetics		TTL3S100				Delay Line Module, 5-Tap (20,40,60,80,100 ns)	BTTLDL100	Technitrol			
	74LS138	Signetics	65	TTL3S110				TTLDL100	Technitrol	145			
	SN54LS138	◊*† TI		Delay Line Module, Three Separate Delays (15 ns each)				Delay Line Module, 5-Tap (25 to 125 ns)	HTTLDL125		Technitrol		
	SN74LS138	* TI	70	TTL3S015				LTTLDL125	Technitrol	150			
TTL-S	DM54S138	† National		Delay Line Module, Three Separate Delays (20 ns each)				Delay Line Module, 5-Tap (25,50,75,100,125 ns)	BTTLDL125		Technitrol		
	DM74S138	National	75	TTL3S020				TTLDL125	Technitrol	155			
	74S138	National		Delay Line Module, Three Separate Delays (50 ns each)				Delay Line Module, 5-tap (30 to 150 ns)	HTTLDL150		Technitrol		
	54S138	† Signetics	80	TTL3S050				HTTLDL150	Technitrol	160			
	74S138	Signetics		Delay Line Module, 10-Tap (12.5 to 125 ns)				LTTLDL150	Technitrol				
	SN54S138	† TI	85	TTLDD125				Delay, Line Module, 5-Tap (30, 60, 90, 120, 150 ns)	TTLDL150	Technitrol			
	SN74S138	* TI		Delay Line Module, 10-Tap (10 to 100 ns)				Delay Line Module, 5-Tap (30,60,90,120,150 ns)	BTTLDL150	Technitrol			
3-Line to 8-Line Decoder/Demultiplexer, Inverting/Non-Inverting, Three-State				LTTLDD100				Delay Line Module, 5-Tap (40 to 200 ns)	HTTLDL200	Technitrol			
TTL-F	MC54F538	† Motorola	90	TTLDD100				HTTLDL200	Technitrol	165			
	MC74F538	Motorola		Delay Line Module, 10-Tap (12.5 to 125 ns)				LTTLDL200	Technitrol				
	54F538	◊† National	95	LTTLDD125				Delay Line Module, 5-Tap (50 to 500 ns)	TTLDD500	Technitrol			
	74F538	◊ National		Delay Line Module, 10-Tap (15 to 150 ns)				Delay Line Module, 5-Tap (50,100,150,200,250 ns)	TTLDL250	Technitrol			
	74F538	* National	100	LTTLDD150				Delay Line Module, 5-Tap (5,10,15,20,25 ns)	BTTLDL025	Technitrol			
	74F538	Signetics		TTLDD150				TTLDL025	Technitrol	170			
TTL-LS	AM25LS2538C	AMD	105	Delay Line Module, 10-Tap (20 to 200 ns)				Delay Line Module, 10-Tap (25 to 250 ns)	HTTLDL025	Technitrol			
3-Line to 8-Line Decoder/Demultiplexer with Input Latches				LTTLDD200				LTTLDL025	Technitrol	175			
TTL-ALS	DM74ALS137	National	110	TTLDD200				Delay Line Module, 5-Tap (50 to 250 ns)	HTTLDL250		Technitrol		
	SN74ALS137	* TI		Delay Line Module, 10-Tap (5 to 50 ns)				LTTLDL250	Technitrol	180			
TTL-AS	SN74AS137	* TI	115	LTTLDD500				Delay Line Module, 5-Tap (50 to 500 ns)	TTLDD500		Technitrol		
TTL-LS	SN74LS137	Motorola		Delay Line Module, 10-Tap (7.5 to 75 ns)				Delay Line Module, 5-Tap (50,100,150,200,250 ns)	TTLDL250	Technitrol	185		
	SN54LS137	◊† TI	120	LTTLDD075				Delay Line Module, 5-Tap (5,10,15,20,25 ns)	BTTLDL025	Technitrol			
	SN74LS137	TI		TTLDD075				TTLDL025	Technitrol	190			
TTL-S	54S137	† Rochester	125	Delay Line Module, 3-Tap (120,160,200 ns)				Delay Line Module, 10-Tap (25 to 250 ns)	LTTLDD250	Technitrol			
3-Line to 8-Line Decoders/Demultiplexer with Address Registers				STTLDL200				Programmable Delay Module (up to 13 ns)	TTLPG301	Technitrol			
TTL-ALS	DM74ALS131	National	130	Delay Line Module, 3-Tap (150,200,250 ns)				STTLDL250	Technitrol	195			
	SN74ALS131	* TI		Delay Line Module, 3-Tap (15,20,25 ns)				Programmable Delay Module (up to 20 ns)	TTLPG302		Technitrol		
TTL-AS	SN74AS131A	* TI	135	STTLDL025				STTLDL500	Technitrol				
4-Line to 16-Line Decoder/Demultiplexer				Delay Line Module, 3-Tap (300,400,500 ns)									
TTL	ML54154	† Lansdale	140										
	ML74154	Lansdale											
	DM54154	† National	145										
	DM74154	National											
	DM8311	National	150										
	54154	† National											
	9311C	National	155										
	9311M	† National											
	54154	† Rochester	160										
	54154	† Signetics											
	74154	Signetics	165										
	SN54154	† TI											
	SN74154	TI	170										

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Delay Lines (Cont'd)											
Programmable Delay Module (up to 34 ns)	TTLPG304	Technitrol		Quad 2-Input AND Power Driver, Open Collector (to 100 V, sinks 500 mA)	TTL UHD-400	† Allegro Micro		Hex Inverter Buffer/Driver Open Collector High Voltage Output, to 15 V	TTL	(Cont'd)	
Programmable Delay Module (up to 41 ns)	TTLPG305	Technitrol			UHD-406	† Allegro Micro	40		7416	* National	
Programmable Delay Module (up to 48 ns)	TTLPG306	Technitrol			UHD-500	† Allegro Micro			7406	* Rochester	
Programmable Delay Module (up to 55 ns)	TTLPG307	Technitrol			UHD-506	† Allegro Micro			7416	* Rochester	
Programmable Delay Module (up to 62 ns)	TTLPG308	Technitrol	5		UHP400	Allegro Micro			5406	† Signetics	100
Programmable Delay Module (up to 69 ns)	TTLPG309	Technitrol			UHP406	Allegro Micro			5416	† Signetics	
Programmable Delay Module (up to 76 ns)	TTLPG310	Technitrol		Quad 2-Input AND Power Driver (to 80 V, sinks 600ma)	TTL UDN5706A	Allegro Micro	45		7406	* Signetics	
Programmable Delay Module (up to 111 ns)	TTLPG315	Technitrol			UDS5706H	† Allegro Micro			7416	* Signetics	
Programmable Delay Module (up to 146 ns)	TTLPG320	Technitrol		Quad 2-Input NAND Buffer, Open Collector, to 15 V Output	TTL DM7426	National			SN5406	*† TI	
Programmable Delay Module (up to 181 ns)	TTLPG325	Technitrol	10		7426	Rochester			SN5416	*† TI	105
Programmable Delay Module (up to 216 ns)	TTLPG330	Technitrol			S8T80	† Signetics			SN7406	* TI	
Programmable Delay Module (up to 286 ns)	TTLPG340	Technitrol			5426	† Signetics			SN7416	* TI	
Programmable Delay Module (up to 321 ns)	TTLPG345	Technitrol			7426	Signetics					
Programmable Delay Module (up to 356 ns)	TTLPG350	Technitrol			SN5426	† TI					
Programmable Delay Module (up to 454 ns)	TTLPG364	Technitrol	15		SN7426	TI					
Drivers				Quad 2-Input NAND Bus Driver, Open Collector, 80ma	TTL 96101	National		Hex Inverter/MOS Memory Driver	TTL DS16149	† National	
Differential Line Driver, RS-422A	TTL-ALS SN55ALS192	*† TI							DS16179	† National	
	SN55ALS193	*† TI		Quad 2-Input NAND Power Driver, Open Collector (to 100 V, sinks 500 mA)	TTL UHD-407	† Allegro Micro			DS36149	National	110
	SN55ALS194	*† TI			UHD-408	† Allegro Micro			DS36179	National	
	SN55ALS195	*† TI			UHD-507	† Allegro Micro	55	Hex, Three-State	TTL 74366	Signetics	
Fiber Optic LED Driver	TTL-F N74F5300	Signetics	20		UHD-508	† Allegro Micro			74367	Signetics	
Fiber Optic LED Driver (dual)	TTL-F N74F5302	Signetics			UHP407	Allegro Micro			TTL-F 54F366	† National	
Line Driver, Quad	TTL-ALS SN55ALS126	† TI			UHP408	Allegro Micro			74F366	National	
	SN55ALS130	† TI		Quad 2-Input NOR Driver	TTL-AS DM74AS1036	National	60		54F366	† Signetics	115
Dual 3-Input, 3-Output AND	TTL-H ML3028	Lansdale (3552)			SN74AS1036A	TI			74F366	† Signetics	
	ML3128	† Lansdale (3552)	25						TTL-LS HD74LS366A	Hitachi	
Dual 3-Input, 3-Output NAND	TTL-H ML3029	Lansdale (3552)		Quad 2-Input NOR 74-Ohm/50-Ohm Line Driver	TTL SN54128	† TI	65	Hex, Three-State Driver	TTL DM54367	† National	
	ML3129	† Lansdale (3552)			SN74128	TI			DM74367	National	120
Dual 4-Input Positive NAND 50 Ohm Line Driver	TTL-S DM54S140	† National							54366A	*† Signetics	
	DM74S140	National		Quad 2-Input OR Power Driver, Open Collector (to 100 V, sinks 500 mA)	TTL UHD-402	† Allegro Micro			54367A	*† Signetics	
	54S140	† Signetics	30		UHD-403	† Allegro Micro			SN54366A	† TI	
	74S140	Signetics			UHD-502	† Allegro Micro			SN54367A	† TI	125
	SN54S140	† TI			UHD-503	† Allegro Micro			SN74367A	TI	
	SN74S140	TI			UHP402	Allegro Micro		Hex 2-Input AND Driver	TTL-ALS DM74ALS808	National	
Quad Bus Driver, Three-State	TTL N8T09	Signetics			UHP403	Allegro Micro			SN54ALS808A	† TI	
	S8T09	† Signetics	35						SN74ALS1808A	TI	
Quad NAND Driver	TTL SG508	† SiliconG		Quad 2-Input OR Power Driver, Open Collector (to 100 V, sinks 500 mA)	TTL UHD-402	† Allegro Micro			TTL-AS DM74AS808A	National	130
Quad NAND Power Driver (to 60 V, sinks 1.5 A)	UDN2540B	Allegro Micro			UHD-403	† Allegro Micro			SN54AS808B	† TI	
					UHD-502	† Allegro Micro			SN74AS1808	TI	
					UHD-503	† Allegro Micro			SN74AS808B	TI	
				Hex Buffer/Driver, Open Collector High Voltage Output, to 30 V	TTL DM5407	† National	70	Hex 2-Input NAND Driver	TTL-ALS DM74ALS804	National	
					DM5417	† National			SN54ALS804A	† TI	135
					DM7407	National			SN74ALS1804A	TI	
					DM7417	National			SN74ALS804A	TI	
					7407	National	75		TTL-AS DM74AS804A	National	140
					7417	National			SN54AS804B	† TI	
					5417	† Rochester			SN74AS1804	TI	
					7407	Rochester			SN74AS804B	TI	
					7417	Rochester	80	Hex 2-Input NOR Driver	TTL-ALS DM74ALS805	National	
					5407	† Signetics			SN54ALS805A	† TI	
					5417	† Signetics			SN74ALS1805A	TI	
					7407	Signetics			TTL-AS DM74AS805A	National	145
					7417	Signetics			SN54AS805B	*† TI	
					SN5407	† TI			SN74AS1805	TI	
					SN5417	† TI			SN74AS805B	* TI	
					SN7407	TI	85	Hex 2-Input OR Driver	TTL-ALS DM74ALS832	National	
					SN7417	TI			SN54ALS832A	† TI	150
				Hex Inverter Buffer/Driver Open Collector High Voltage Output, to 30 V	TTL DM5406	*† National	90		SN74ALS1832A	TI	
					DM5416	*† National			DM74AS832A	National	
					DM7406	* National			SN54AS832B	† TI	
					DM7416	* National			SN74AS1832	TI	
					7406	* National	95		SN74AS832B	TI	
								Octal Trapezoidal Driver	TTL DS3890	National	155
								10-Bit Buffer/Driver, Three-State, Inverting	TTL-ALS SN74ALS29828	TI	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL-TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Drivers (Cont'd)								Quad Edge-Triggered with Clear, Complementary Output (Cont'd)			
10-Bit Buffer/Driver, Three-State, Non-Inverting TTL-ALS SN74ALS29827 TI				Dual Positive Edge-Triggered with Preset and Clear TTL DM5474 † National DM7474 National 5474 † National 7474 National 7474 Rochester 5474 † Signetics 7474 Signetics SN5474 † TI SN7474 TI				50 TTL-ALS M74ALS175 † Mitsubishi DM74ALS175 National SN54ALS175 *† TI SN74ALS175 ° TI			
Flip-Flops, D-Type								55 TTL-AS DM74AS175 National SN74AS175A ° TI			
Flip-Flop, Clock Driver 74F50729 Signetics (3655)								TTL-F MC54F175 † Motorola MC74F175 Motorola 54F175 °† National 74F175 ° National 74F175 ° Signetics SN54F175 *† TI SN74F175 ° TI			
Monostable Multivibrator TTL ML54121 † Lansdale ML74121 Lansdale 54121 † Rochester				5 TTL-ALS DM74ALS74 National SN54ALS74A *† TI SN74ALS74A ° TI				60 TTL-AS DM74AS74 National SN54AS74 °*† TI SN74AS74 ° TI			
Monostable Multivibrator, Retriggerable with Clear TTL ML54122 † Lansdale ML74122 Lansdale				TTL-F MC74F74 Motorola 54F74 °*† National 74F74 ° National 74F74 ° Signetics SN54F74 *† TI SN74F74 ° TI				65 TTL-LS GD74LS175 GoldStar HD74LS175 Hitachi SN54LS175 † Motorola SN74LS175 Motorola DM54LS175 † National DM74LS175 National 54LS175 † National 74LS175 ° National 54LS175 † SGS-Thomson 74LS175 SGS-Thomson 54LS175 † Signetics 74LS175 Signetics SN54LS175 °*† TI SN74LS175 ° TI			
Monostable Multivibrator, Retriggerable, Dual TTL ML54123 † Lansdale ML74123 Lansdale				TTL-H RC3060 Rochester 54H74 † Rochester 74H74 Rochester				70 TTL-L 54L74 † Rochester GD74LS74A GoldStar HD74LS74A Hitachi SN54LS74A † Motorola SN74LS74A Motorola DM54LS74 † National DM74LS74 National 54LS74 † National 74LS74 National 74LS74 Rochester 54LS74 † SGS-Thomson 74LS74 SGS-Thomson 54LS74A † Signetics 74LS74A Signetics SN54LS74A °*† TI SN74LS74A ° TI			
Nonvolatile Octal D-Type with Recall (ferroelectric memory cells for nonvolatile store) TTL-LS K74C372 National				10 TTL-L 54L74 † Rochester GD74LS74A GoldStar HD74LS74A Hitachi SN54LS74A † Motorola SN74LS74A Motorola DM54LS74 † National DM74LS74 National 54LS74 † National 74LS74 National 74LS74 Rochester 54LS74 † SGS-Thomson 74LS74 SGS-Thomson 54LS74A † Signetics 74LS74A Signetics SN54LS74A °*† TI SN74LS74A ° TI				75 TTL-S DM54S175 † National DM74S175 National 74S175 National 54S175 † Rochester 54S175 † Signetics 74S175 Signetics SN54S175 † TI SN74S175 TI			
Dual TTL-F M74F74 Mitsubishi TTL-H ML3060 Lansdale (3552) ML3160 † Lansdale (3552) RC3160 Rochester				15 Dual TTL-LS T54LS74A † SGS-Thomson				80 TTL-S DM54S175 † National DM74S175 National 74S175 National 54S175 † Rochester 54S175 † Signetics 74S175 Signetics SN54S175 † TI SN74S175 TI			
Dual TTL-LS T74LS74A SGS-Thomson				20 Dual D-Type, Edge-Triggered TTL ML5479 † Lansdale ML7479 Lansdale				85 Quad Register with Dual Three-State Outputs TTL AM2919M † AMD			
Dual D-Type TTL-ALS 74ALS74A Signetics				25 Dual D-Type, Edge-Triggered TTL ML5474 † Lansdale ML7474 Lansdale 5474 Rochester				90 Quad, Standard TTL and Three-State Outputs TTL AM2918M † AMD SFC2918 SGS-Thomson			
Dual D-Type, Synchronizing Cascaded TTL-F 74F50728 Signetics				30 Dual D-Type Edge-Triggered TTL DM74ALS874 National DM74ALS876 National SN54ALS874B † TI SN74ALS874B TI SN74ALS876A TI SN74ALS878A TI SN74ALS879A TI				95 Quad with Common Clock Enable TTL-F MC54F379 † Motorola MC74F379 Motorola 54F379 °† National 74F379 ° National 74F379 ° Signetics SN74F379 ° TI			
Dual Edge-Triggered TTL-ALS DM74ALS874 National DM74ALS876 National SN54ALS874B † TI SN74ALS874B TI SN74ALS876A TI SN74ALS878A TI SN74ALS879A TI				35 TTL-AS DM74AS874 National DM74AS876 National DM74AS878 National DM74AS879 National SN54AS874 °† TI SN74AS874 TI SN74AS876 TI SN74AS878 TI SN74AS879 TI				100 TTL-LS SN54LS379 † Motorola SN74LS379 Motorola 54LS379 † National 74LS379 ° National T54LS379 † SGS-Thomson T74LS379 SGS-Thomson SN54LS379 °*† TI SN74LS379 ° TI			
Dual Edge-Triggered, Inverting, Three-State TTL-ALS M74ALS876A Mitsubishi				40 Quad D-Type, Metastable Transparent TTL-F 74F5074 Signetics (3654)				105 Quad Three-State TTL DM54173 † National DM74173 National 54173 † National 74173 National 74173 Rochester N8T10 Signetics S8T10 † Signetics 54173 † Signetics			
Dual Edge-Triggered, Non-Inverting, Three-State TTL-ALS M74ALS874B Mitsubishi				45 Quad D-Type (clock driver) TTL-F MC74F803 ° Motorola				110 Quad Edge-Triggered with Clear, Complementary Output TTL DM54175 † National DM74175 National 54173 † National 74173 National 74175 Rochester 54175 † Signetics 74175 Signetics			
Dual Edge-Triggered, Three-State and Synchronous Reset, Non-Inverting TTL-ALS M74ALS878A Mitsubishi M74ALS879A Mitsubishi				Dual D-Type, Three-State TTL-F 74F173 Signetics				(Continued)			
Dual, Metastable Resistant TTL-AS SN74AS3074 TI				Quad Edge-Triggered with Clear, Complementary Output TTL DM54175 † National DM74175 National 54173 † National 74173 National 74175 Rochester 54175 † Signetics 74175 Signetics				(Continued)			
Dual Positive Edge-Triggered (w/set and reset) TTL-ALS M74ALS74A Mitsubishi				Dual Positive Edge-Triggered with Preset TTL-F MC54F74 Motorola				(Continued)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

•Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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♦ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Flip-Flops, D-Type (Cont'd)				Flip-Flops, J-K Type				Dual J-K Positive Edge-Triggered			
Octal Edge-Triggered, Three-State TTL-LS (Cont'd)				9-Bit Parallel, Non-Inverting TTL-AS SN54AS823 *† TI				TTL-ALS 74ALS109A Signetics			
DM54LS374 † National				SN74AS823 * TI				74ALS112A Signetics			
DM74LS374 National				TTL-F 54F823 *† National				Dual J-K Positive Edge-Triggered, Preset and Clear			
54LS374 † National				74F823 * National				TTL DM54109 † National			
74LS374 ♦ National				74F823 * Signetics				DM74109 National			
74LS574 ♦ National				10-Bit D-Type Edge-Triggered, Three-State, Non-Inverting				9024 Rochester			
T74LS374 SGS-Thomson				TTL-F M74F821 ♦ Mitsubishi				54109 † Signetics			
54LS374 † Signetics				10-Bit Parallel, Inverting				SN54109 † TI			
74LS374 Signetics				F 74F822 Signetics				SN74109 TI			
SN54LS374 ♦† TI				TTL-AS SN54AS822 † TI				TTL-ALS DM74ALS109 National			
SN74LS374 * TI				SN74AS822 TI				SN54ALS109A *† TI			
TTL-S GD74S374 GoldStar				10-Bit Parallel, Non-Inverting				SN74ALS109 * TI			
DM74S374 National				TTL-AS SN54AS821 *† TI				TTL-AS DM74AS109 National			
54S374 † Signetics				SN74AS821 * TI				SN54AS109 ♦*† TI			
74S374 Signetics				TTL-F 54F821 *† National				SN74AS109 * TI			
SN54S374 † TI				74F821 * National				TTL-F MC54F109 † Motorola			
SN74S374 TI				74F821 * Signetics				MC74F109 Motorola			
Octal Edge-Triggered, Three-State (dual)				Flip-Flops, J-K Type				54F109 ♦*† National			
TTL-ALS DPLALS574X Dense-Pac				AND Gated, Edge-Triggered with Preset and Clear				74F109 ♦* National			
TTL-AS DPLAS574X Dense-Pac				TTL 5470 † Rochester				74F109 ♦* Signetics			
TTL-F DPLF574X Dense-Pac				7470 Rochester				SN54F109 ♦*† TI			
TTL-LS DPLLS574X Dense-Pac				SN5470 † TI				SN74F109 * TI			
Octal Edge-Triggered, Three-State, Inverting				SN7470 TI				TTL-LS HD74LS109A Hitachi			
TTL-ALS M74ALS576A Mitsubishi				AND Gated Master-Slave with Preset and Clear				SN54LS109A † Motorola			
Octal, Edge-Triggered, Three-State, Non-Inverting				TTL 7472 Rochester				SN74LS109A † Motorola			
TTL-ALS M74ALS574A Mitsubishi				SN5472 † TI				DM54LS109 † National			
TTL-F M74F574 Mitsubishi				TTL-H 54H72 † Rochester				54LS109 † National			
Octal, Metastable Resistant				74H72 Rochester				74LS109 ♦ SGS-Thomson			
TTL-AS SN74AS3374 * TI				AND Input, Single				54LS109 † Signetics			
Octal, Metastable-Resistant				TTL-H ML3051 Lansdale (3552)				74LS109 Signetics			
AS SN74AS4374 TI				ML3052 Lansdale (3552)				SN54LS109A ♦*† TI			
Octal Register, Non-Inverting, Three-State				ML3151 † Lansdale (3552)				SN74LS109A * TI			
TTL-S AM2954M † AMD				ML3152 † Lansdale (3552)				TTL-S 74S109 National			
Octal with Enable				J-K Flip-Flop, Positive Edge-Triggered				Dual J-K, Positive Trigger			
TTL-F MC74F377 ♦ Motorola				TTL ML5470 † Lansdale				TTL-F M74F109 ♦ Mitsubishi			
54F377 * National				ML7470 Lansdale				Dual J-K with Preset, Common Clock and Common Clear			
74F377 * National				J-K Master-Slave Flip-Flop				TTL-H 54H78 † Rochester			
54F377 † Signetics				TTL ML5472 † Lansdale				TTL-L 54L78 † Rochester			
74F377 Signetics				ML7472 Lansdale				TTL-LS HD74LS78A Hitachi			
SN74F377 TI				5472 † Rochester				SN54LS78A † TI			
TTL-LS SN54LS377 † Motorola				Master-Slave				SN74LS78A TI			
SN74LS377 Motorola				TTL 54105 Rochester				Dual Master-Slave with Clear			
54LS377 † National				9000 Rochester				TTL DM54107 † National			
74LS377 ♦ National				9001 Rochester				DM5473 † National			
T74LS377 SGS-Thomson				Master-Slave, AND-OR Input				DM74107 National			
54LS377 † Signetics				TTL-H 54H71 † Rochester				DM7473 National			
74LS377 Signetics				Negative Edge-Triggered, AND Input				5473 † National			
SN54LS377 ♦*† TI				TTL-H 54H102 Rochester				7473 Rochester			
SN74LS377 * TI				Negative Edge-Triggered, AND-OR Input				54107 † Signetics			
8-Bit D-Type, Edge-Triggered, Three-State, Non-Inverting				TTL-H 54H101 Rochester				5473 † Signetics			
TTL-F M74F825 ♦ Mitsubishi				74H101 Rochester				SN54107 † TI			
8-Bit Parallel, Inverting				Dual				SN5473 † TI			
TTL-AS SN54AS826 † TI				TTL-H ML3061 Lansdale (3552)				SN74107 TI			
SN74AS826 TI				ML3062 Lansdale (3552)				TTL-H 54H73 † Rochester			
TTL-F 74F826 Signetics				ML3161 † Lansdale (3552)				74H73 Rochester			
8-Bit Parallel, Non-Inverting				ML3162 † Lansdale (3552)				TTL-L 54L73 † Rochester			
TTL-AS SN54AS825 † TI				TTL-LS SN54LS114A ♦*† TI				HD74LS107A Hitachi			
SN74AS825 TI				Dual J-K Master-Slave				HD74LS73A Hitachi			
TTL-F 54F825 † National				TTL ML54107 † Lansdale				SN54LS107A † Motorola			
74F825 National				ML74107 Lansdale				SN74LS107A Motorola			
74F825 Signetics				Dual J-K Master-Slave Flip-Flop				SN74LS73A Motorola			
9-Bit D-Type, Edge-Triggered, Three-State, Non-Inverting				TTL ML5473 † Lansdale				DM54LS107A † National			
TTL-F M74F823 ♦ Mitsubishi				ML7473 Lansdale				DM54LS73A † National			
9-Bit Parallel, Inverting				Dual J-K Master-Slave with Preset and Clear				DM74LS107A National			
TTL-AS SN74AS824 TI				TTL ML5476 † Lansdale				54LS107 † Signetics			
TTL-F 74F824 Signetics				ML7476 Lansdale				54LS73 † Signetics			
				5476 † Rochester				74LS107 Signetics			
				Dual J-K, Metastable Transparent				74LS73 Signetics			
				TTL-F 74F50109 Signetics (3654)				SN54LS107A ♦† TI			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Gates, NAND (Cont'd)				Quad 2-Input Buffer, Open Collector TTL-LS (Cont'd)				Quad 2-Input, Open Collector TTL-LS (Cont'd)			
Quad 2-Input TTL-S	SN54S00 SN74S00	† TI TI		74LS38	Rochester			54LS01	† Signetics		145
Quad 2-Input Buffer TTL	ML5437 ML5438 ML7437 ML7438 DM5437 DM7437 5437 7437 5437 7437 5437 7437 SN5437 SN7437	† Lansdale † Lansdale Lansdale Lansdale † National National † National National † Rochester Rochester † Signetics Signetics † TI TI	5	54LS38	† Signetics		75	54LS03	† Signetics		
TTL-ALS	DM74ALS37 74ALS38A SN54ALS37A SN74ALS37A	National Signetics *† TI * TI	10	74LS38	Signetics			74LS01	Signetics		
TTL-F	54F37 74F37 74F37 SN74F37	* National * National * Signetics TI	15	SN54LS38	*† TI * TI			SN54LS01	*† TI		
TTL-LS	HD74LS37 SN54LS37 SN74LS37 DM54LS37 DM74LS37 54LS37 74LS37 74LS37 54LS37 74LS37 54LS37 74LS37 SN54LS37 SN74LS37	Hitachi † Motorola Motorola † National National † National National National † SGS-Thomson SGS-Thomson † Signetics Signetics *† TI * TI	20	SN74LS38	* TI			SN54LS03	*† TI		
TTL-S	54S37 74S37 SN54S37 SN74S37	† Signetics Signetics † TI TI	25	Quad 2-Input Buffer, Open Collector, to 15 V TTL-LS	HD74LS26 SN54LS26 SN74LS26 DM54LS26 DM74LS26 54LS26 74LS26 74LS26 74LS26A 54LS26 74LS26 SN54LS26 SN74LS26	Hitachi † Motorola Motorola † National National † National National National SGS-Thomson † Signetics Signetics *† TI TI	80	TTL-S	DM54S03 DM74S03 74S03 74S03 54LS38 74LS38 54S03 74S03 SN54S03 SN74S03	† National National National Rochester † SGS-Thomson SGS-Thomson Signetics Signetics † TI TI	150
Quad 2-Input Buffer, Open Collector TTL	DM5438 DM7438 7438 7439 5438 7438 7439 5438 5439 7438 7439 SN5438 SN7438 SN7439	† National National National National † Rochester Rochester Rochester † Signetics Signetics † Signetics Signetics † TI TI TI	30	TTL-ALS	M74ALS03B M74ALS1003A DM74ALS01 DM74ALS03 DM74ALS1003 SN54ALS01 SN54ALS03B SN74ALS01 SN74ALS03B SN74ALS1003A	Mitsubishi Mitsubishi National National National *† TI *† TI * TI * TI TI	85	Quad 2-Input (Schmitt) TTL	ML54132 ML74132 54132	† Lansdale Lansdale † Rochester	160
TTL-ALS	DM74ALS38 SN54ALS38A SN74ALS38A	National *† TI * TI	35	TTL-F	54F37 74F37 74F37 SN74F37	* National * National * Signetics TI	90	Quad 2-Input TTL-F	SN54F00	*† TI	
TTL-F	54F37 74F37 74F37 SN74F37	* National * National * Signetics TI	40	TTL-LS	ML5401 ML5403 ML7401 ML7403 DM5401 DM5403 DM7401 DM7403 7401 7403 5401 7401 7403 N8881 5403 7403 SN5401 SN5403 SN7401 SN7403	† Lansdale † Lansdale Lansdale Lansdale † National † National National National National National † Rochester Rochester Rochester Signetics † Signetics Signetics † TI † TI TI TI	95	Hex 2-Input TTL-AS	DM74AS1804	National	
Quad 2-Input Buffer, Open Collector TTL	DM5438 DM7438 7438 7439 5438 7438 7439 5438 5439 7438 7439 SN5438 SN7438 SN7439	† National National National National † Rochester Rochester Rochester † Signetics Signetics † Signetics Signetics † TI TI TI	45	TTL-ALS	M74ALS03B M74ALS1003A DM74ALS01 DM74ALS03 DM74ALS1003 SN54ALS01 SN54ALS03B SN74ALS01 SN74ALS03B SN74ALS1003A	Mitsubishi Mitsubishi National National National *† TI *† TI * TI * TI TI	100	8-Input TTL	ML5430 ML7430 DM5430 5430 7430 5430 7430 5430 SN5430 SN7430	† Lansdale Lansdale † National National † National † Rochester Rochester † Signetics † TI TI	165
TTL-S	54S37 74S37 SN54S37 SN74S37	† Signetics Signetics † TI TI	50	TTL-F	54F30 74F30 SN54F30 SN74F30	† National National *† TI * TI	105	TTL-ALS	DM74ALS30 74ALS30A SN54ALS30A SN74ALS30A	National Signetics *† TI * TI	175
Quad 2-Input Buffer, Open Collector TTL	DM5438 DM7438 7438 7439 5438 7438 7439 5438 5439 7438 7439 SN5438 SN7438 SN7439	† National National National National † Rochester Rochester Rochester † Signetics Signetics † Signetics Signetics † TI TI TI	55	TTL-LS	ML3004 ML3104 RC3004 RC3104 74H01	Lansdale (3552) † Lansdale (3552) Rochester Rochester Rochester	110	TTL-AS	DM74AS30 SN54AS30 SN74AS30	National *† TI * TI	180
TTL-ALS	DM74ALS38 SN54ALS38A SN74ALS38A	National *† TI * TI	60	TTL-L	54L01 54L03	† Rochester † Rochester	115	TTL-F	54F30 74F30 SN54F30 SN74F30	† National National *† TI * TI	185
TTL-F	54F38 74F38 74F38 SN74F38	* National * National * Signetics TI	65	TTL-LS	HD74LS01 HD74LS03 SN54LS01 SN54LS03 SN74LS01 SN74LS03 DM54LS03 DM74LS03 54LS03 74LS03 74LS03 54LS03 74LS03	Hitachi Hitachi † Motorola † Motorola Motorola Motorola † National National † National National National † Rochester Rochester † SGS-Thomson SGS-Thomson	120	TTL-H	ML3015 ML3016 ML3115 ML3116 RC3015 RC3016 RC3115 RC3116 54H30 74H30	Lansdale (3552) Lansdale (3552) † Lansdale (3552) † Lansdale (3552) Rochester Rochester Rochester Rochester † Rochester Rochester	190
TTL-LS	HD74LS38 SN54LS38 SN74LS38 DM54LS38 DM74LS38 54LS38 74LS38	Hitachi † Motorola Motorola † National National † National National	70				125	TTL-L	54L30	† Rochester	195
							130	TTL-LS	GD74LS30 HD74LS30 SN54LS30 SN74LS30 DM54LS30 DM74LS30 54LS30 74LS30 74LS30 T54LS30 74LS30 54LS30 74LS30 54LS30 74LS30	GoldStar Hitachi † Motorola Motorola † National National † National National National † Rochester SGS-Thomson SGS-Thomson † SGS-Thomson † SGS-Thomson † Signetics Signetics	200
							135				205
							140				210

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Gates, OR (Cont'd)				Dual 4-Input, with Strobe TTL (Cont'd)				Quad 2-Input TTL-AS (Cont'd)				
Quad 2-Input TTL	SN5432	† TI	5	Dual 4-Input, with Strobe, Expandable (see 54/7460 expander) TTL	SN5425	† TI	65	TTL-AS	SN54AS02	◊† TI	130	
	SN7432	TI			SN7425	TI		TTL-F	M74F02	Mitsubishi		
TTL-ALS	M74ALS1032A	Mitsubishi			5423	† Rochester			SN54F36	† TI		
	DM74ALS1032	National			7423	Rochester			SN74F36	◊ TI		
	DM74ALS32	National			SN5423	† TI		TTL-H	ML3002	Lansdale (3552)		
	74ALS32	Signetics	10		SN7423	TI	70		ML3102	† Lansdale (3552)	135	
	SN54ALS32	◊† TI							MC3002	Motorola		
	SN74ALS1032A	TI						TTL-LS	T54LS02	† SGS-Thomson		
	SN74ALS32	◊ TI							T74LS02	SGS-Thomson		
TTL-AS	DM74AS1032	National		15	Dual 5-Input TTL-F	74F260	◊ Signetics	75	Quad 2-Input Buffer, Open Collector TTL	5433	† Signetics	140
	DM74AS32	National			SN74F260	TI			7433	Signetics		
	SN54AS1032A	◊† TI							SN5433	† TI		
	SN54AS32	◊† TI							SN7433	TI		
	SN74AS1032A	TI					TTL-ALS		DM74ALS33	National		
	SN74AS32	◊ TI	20					SN54ALS33A	◊† TI	145		
TTL-F	M74F32	Mitsubishi						SN74ALS33A	◊ TI			
	MC54F32	† Motorola					80	TTL-LS	SN54LS33		† Motorola	150
	MC74F32	Motorola							SN74LS33		Motorola	
	54F32	◊† National							54LS33		† National	
	74F32	◊ National						74LS33	◊ National			
	74F32	◊ Signetics	25	TTL-S	54S260	† Rochester	85		T54LS33	† SGS-Thomson	155	
	SN54F32	◊† TI			74S260	Rochester			74LS33	† SGS-Thomson		
	SN74F32	◊ TI			54S260	† Signetics			54LS33	† Signetics		
TTL-H	ML3003	Lansdale			74S260	◊ Signetics			74LS33	Signetics		
	ML3103	† Lansdale (3552)			SN54S260	◊† TI			SN54LS33	◊† TI		
	MC3003	Motorola	30		SN74S260	◊ TI	90	Quad 2-Input, Open Collector TTL-LS	74LS266	Signetics	160	
TTL-LS	GD74LS32	GoldStar										
	HD74LS32	Hitachi										
	SN54LS32	† Motorola										
	SN74LS32	Motorola		35				95	Quad 2-Input (54/7428 devices are also buffers) TTL	M74ALS1002A	Mitsubishi	165
	DM54LS32	† National										
	DM74LS32	National										
	54LS32	† National										
	74LS32	◊ National	40								170	
	74LS32	Rochester										
	T54LS32	† SGS-Thomson										
	T74LS32	SGS-Thomson										
	54LS32	† SGS-Thomson		45				100				175
	74LS32	SGS-Thomson										
	54LS32	† Signetics										
	74LS32	Signetics										
	SN54LS32	◊† TI	50					105	TTL-ALS	DM74ALS02	National	180
	SN74LS32	◊ TI										
TTL-S	GD74S32	GoldStar										
	DM54S32	† National										
	DM74S32	National		55				110				185
	74S32	National										
	54S32	† Signetics										
	74S32	Signetics										
	SN54S32	† TI	60					115				190
	SN74S32	TI										
Hex 2-Input TTL-AS	DM74AS1832	National										
Hex 2-Input Line Driver/Buffer TTL-ALS	DM74ALS832	National										
	SN54ALS832A	† TI		65				120				195
Hex 2-Input OR Driver TTL-ALS	SN74ALS832A	TI										
			70					125				200
				75				130				205
			80					135				210
				85				140				215
			90					145				220
				95				150				225
			100					155				230
				105				160				235
			110					165				240
				115				170				245
			120					175				250
				125				180				255
			130					185				260
				135				190				265
			140					195				270
				145				200				275
			150					205				280
				155				210				285
			160					215				290
				165				220				295
			170					225				300
				175				230				305
			180					235				310
				185				240				315
			190					245				320
				195				250				325
			200					255				330
				205				260				335
			210					265				340
				215				270				345
			220					275				350
				225				280				355
			230					285				360
				235				290				365
			240					295				370
				245				300				375
			250					305				380
				255				310				385
			260					315				390
				265				320				395
			270					325				

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Gates, NOR (Cont'd)				Quad 2-Input, Totem Pole Outputs				Quad 2-Input, Open Collector			
Quad 2-Input (54/7428 devices are also buffers)				TTL				TTL-LS			
TTL-LS				DM5486 National				74LS266 National			
74LS28 National				DM7486 National				54LS266 † SGS-Thomson			
T54LS28 † SGS-Thomson				5486 † National				74LS266 SGS-Thomson			
T74LS28 SGS-Thomson				7486 National				S8242 † Signetics			
54LS02 † SGS-Thomson				7486 Rochester				54LS266 † Signetics			
74LS02 SGS-Thomson				5486 † Signetics				SN54LS266 † TI			
54LS02 † Signetics				7486 Signetics				SN74LS266 TI			
54LS28 † Signetics				SN5486 † TI							
74LS02 Signetics				SN7486 TI							
SN54LS02 *† TI				TTL-ALS DM74ALS86 National				Latches			
SN54LS28 † TI				SN54ALS86 *† TI				Data Latch, 10-Line, Inverting			
SN74LS02 * TI				SN74ALS86 *† TI				M66211 Mitsubishi			
SN74LS28 TI								Data Latch, 10-Line, Non-Inverting			
				TTL-AS DM74AS86 National				M66210 Mitsubishi			
				SN74AS86 TI							
								Dual Octal Latch			
				TTL-F MC54F86 Motorola				TTL-F 74F1604 Signetics			
				MC74F86 Motorola				Dual 4-Bit			
				54F86 *† National				TTL-ALS			
				74F86 *† National				DM74ALS873 National			
				54F86 *† Signetics				SN54ALS873B † TI			
				74F86 *† Signetics				SN74ALS873B TI			
				SN74F86 TI							
				TTL-L 54L86 † Rochester				TTL-AS DM74AS873 National			
				TTL-LS GD74LS86 GoldStar				SN54AS873 † TI			
				HD74LS386 Hitachi				SN74AS873 TI			
				HD74LS86 Hitachi							
				SN54LS386 † Motorola				Dual 4-Bit Addressable			
				SN54LS86 † Motorola				TTL-F MC74F256 Motorola			
				SN74LS386 Motorola				54F256 National			
				SN74LS86 Motorola				74F256 National			
				DM54LS86 † National				74F256 Signetics			
				DM74LS86 National				TTL-LS			
				74LS386 † National				SN54LS256 † Motorola			
				74LS86 † National				SN74LS256 Motorola			
				74LS386 Rochester				54LS256 † National			
				74LS86 Rochester				74LS256 † National			
				74LS86 SGS-Thomson				T54LS256 † SGS-Thomson			
				54LS86 † Signetics				T74LS256 SGS-Thomson			
				74LS86 Signetics				74LS256 Signetics			
				SN54LS386A †† TI				Dual 4-Bit Addressable Latch			
				SN54LS86A †† TI				TTL-LS 74LS256 SGS-Thomson			
				SN74LS86A TI				Dual 4-Bit D-Type Transparent Latch, Three-State, Inverting			
				TTL-S DM74S86 National				TTL-ALS M74ALS880A Mitsubishi			
				74S86 National				Dual 4-Bit D-Type Transparent, Three-State, Non-Inverting			
				74S86 Rochester				TTL-ALS M74ALS873B Mitsubishi			
				54S86 † Signetics				Dual 4-Bit with Clear			
				74S86 Signetics				TTL			
				SN54S86 † TI				9308C National			
				SN74S86 TI				9308M † National			
								54116 † Signetics			
								SN54116 † TI			
								SN74116 TI			
								Quad Bistable, Complementary Outputs			
				Gates, Exclusive OR				TTL			
				Quad				DM5475 † National			
				TTL-LS T54LS266 † SGS-Thomson				DM7475 National			
								5475 † National			
				Quad 2-Input				7475 National			
				TTL-ALS				7475 Rochester			
				DM74ALS810 National				5475 † Signetics			
				DM74AS810 National				SN5475 † TI			
				SN74ALS810 TI				SN7475 TI			
								TTL-L 54L75 † Rochester			
				TTL-H ML3022 Lansdale (3552)				TTL-LS			
				ML3122 † Lansdale (3552)				GD74LS75 GoldStar			
								HD74LS375 Hitachi			
				TTL-LS T74LS266 SGS-Thomson				HD74LS75 Hitachi			
								SN54LS375 † Motorola			
								SN54LS75 † Motorola			
				Quad 2-Input, Open Collector				SN74LS375 Motorola			
				TTL				SN74LS75 Motorola			
				9386C National				DM54LS75 † National			
				9386M † National				DM74LS75 National			
				9386 Rochester				54LS375 † National			
				N8242 Signetics				74LS375 † National			
				N9386 Signetics				74LS375 † National			
				S9386 † Signetics				74LS375 † National			
								74LS375 † National			
				TTL-ALS DM74ALS811 National				74LS375 † National			
				DM74AS811 National				74LS375 † National			
				SN74ALS811 TI				74LS375 † National			
								74LS375 † National			
				TTL-LS HD74LS266 Hitachi				74LS375 † National			
				SN54LS266 † Motorola				74LS375 † National			
				SN74LS266 Motorola				74LS375 † National			
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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Latches (Cont'd)				Octal Transparent Bidirectional TTL-F				8-Bit Latch			
Quad Bistable, Complementary Outputs TTL-LS				TTL-F M74F543 Mitsubishi				TTL-LS T54LS259 ↑ SGS-Thomson			
(Cont'd)				Octal Transparent Bidirectional Latch, Inverting, Three-State				8-Bit, Non-Inverting			
54LS75 ↑ Signetics				TTL-ALS 74ALS543 Signetics				TTL-ALS SN74ALS29845 * TI			
74LS375 Signetics				74ALS543-1 Signetics				8-Bit, Transparent, D Type, Three-State			
74LS75 Signetics				Octal Transparent Bidirectional Latch, Non-Inverting, Three-State				TTL-ALS DM74ALS373 National			
SN54LS375 ♦ ↑ TI				TTL-ALS 74ALS544 Signetics				DM74ALS573 National			
SN54LS75 ↑ TI				74ALS544-1 Signetics				SN54ALS373 * ↑ TI			
SN74LS375 TI				Octal Transparent, Inverting				SN54ALS573B * ↑ TI			
SN74LS75 TI				TTL-ALS DM74ALS880 National				SN74ALS373 * TI			
Quad Bistable Latch				SN74ALS880A TI				TTL-AS			
TTL ML5475 ↑ Lansdale				Octal Transparent Latch				DM74AS373 National			
ML5477 ↑ Lansdale				TTL-LS 54LS373 ↑ SGS-Thomson				DM74AS573 National			
ML7475 Lansdale				Octal Transparent Latch, Three-State				SN54AS373 ♦ ↑ TI			
ML7477 Lansdale				TTL-ALS 74ALS563A Signetics				SN54AS573 * ↑ TI			
5477 ↑ Rochester				Octal Transparent, Three-State				SN74AS373 * TI			
7477 Rochester				TTL-ALS 74ALS373 Signetics				SN74AS573 * TI			
Quad Bistable, Single Output				Octal 2-Input Multiplexed, Three-State Outputs				TTL-F			
TTL-L 54L77 ↑ Rochester				TTL-F 54F604 ↑ Signetics				MC54F373 ↑ Motorola			
TTL-LS HD74LS77 Hitachi				54F605 ↑ Signetics				MC74F373 Motorola			
SN54LS77 ↑ Motorola				74F604 Signetics				54F373 ♦ ↑ National			
SN74LS77 Motorola				74F605 Signetics				54F412 ↑ National			
Quad Multifunction				TTL-LS SN74LS607 TI				54F432 ↑ National			
TTL 9314C National				6-Bit (independent 2 and 4-Bit)				54F573 * ↑ National			
9314M ↑ National				TTL-S N8T3404 Signetics				74F373 ♦ National			
S9314 ↑ Signetics				8-Bit Addressable Latch				74F412 ♦ National			
Quad R-S Type				TTL-LS T74LS259 SGS-Thomson				74F432 National			
TTL-LS T74LS279 SGS-Thomson				8-Bit, Addressable, with Clear				74F573 * ↑ Signetics			
Quad Set-Reset				TTL DM8334 National				74F373 * Signetics			
TTL 54279 ↑ National				DM9334 ↑ National				74F412 Signetics			
74279 National				9334C National				74F432 * Signetics			
74279 Rochester				9334M ↑ National				SN54F373 * ↑ TI			
54279 ↑ Signetics				N9334 Signetics				SN54F573 * ↑ TI			
SN54279 ↑ TI				S9334 ↑ Signetics				SN74F373 * TI			
SN74279 TI				SN54259 ↑ TI				SN74F573 * TI			
TTL-LS				SN74259 TI				TTL-LS			
HD74LS279 Hitachi				TTL-ALS SN54ALS259 * ↑ TI				GD74LS373 GoldStar			
SN54LS279 ↑ Motorola				SN74ALS259 * TI				HD74LS373 Hitachi			
SN74LS279 Motorola				TTL-F				SN54LS373 ↑ Motorola			
DM54LS279 ↑ National				MC74F259 Motorola				SN74LS373 Motorola			
DM74LS279 National				54F259 National				DM54LS373 ↑ National			
54LS279 ↑ National				74F259 National				DM74LS373 National			
74LS279 ♦ National				74F259 Signetics				74LS373 ♦ National			
74LS279 ♦ National				TTL-LS				74LS573 ♦ National			
74LS279 ♦ National				HD74LS259 Hitachi				T74LS373 SGS-Thomson			
74LS279 ♦ National				SN54LS259 * ↑ TI				S8TS805 ↑ Signetics			
74LS279 ♦ National				SN74ALS259 * TI				S8TS806 ↑ Signetics			
54LS279 ↑ SGS-Thomson				TTL-F				54LS363 ↑ Signetics			
74LS279 SGS-Thomson				MC74F259 Motorola				54LS373 ↑ Signetics			
54LS279 ↑ Signetics				54F259 National				74LS373 Signetics			
SN54LS279A ♦ ↑ TI				74F259 National				SN54LS373 ♦ ↑ TI			
SN74LS279A * TI				74F259 Signetics				SN74LS373 * TI			
Octal				TTL-LS				TTL-S			
IL8282 Lansdale (3549)				HD74LS259 Hitachi				DM54S373 ↑ National			
IL8283 Lansdale (3549)				SN54LS259 ↑ Motorola				DM74S373 National			
Octal D-Type				SN74LS259 Motorola				54S373 Signetics			
TTL-ALS SN74ALS580 TI				DM54LS259 ↑ National				74S373 Signetics			
TTL-AS SN74AS573A * TI				DM74LS259 National				SN54S373 ↑ TI			
TTL-F M74F373 Mitsubishi				54LS259 ↑ National				SN74S373 TI			
Octal D-Type, Transparent				74LS259 ♦ National				8-Bit, Transparent, D-Type, Inverting			
TTL-ALS SN74ALS563 * TI				74LS259 Rochester				TTL-AS SN74AS846 TI			
TTL-AS SN54AS573A ♦ ↑ TI				54LS259 ↑ SGS-Thomson				74F846 Signetics			
Octal D-Type Transparent Latch				74LS259 SGS-Thomson				8-Bit, Transparent, D-Type, Inverting Three State			
TTL-F SN54F563 * ↑ TI				54LS259 ↑ Signetics				TTL-ALS SN74ALS580A TI			
Octal D-Type Transparent Latch, Three-State				74LS259 Signetics				8-Bit, Transparent, D-Type, Inverting Three-State			
TTL-ALS 74ALS573B Signetics				SN54LS259B ♦ ↑ TI				TTL-ALS M74ALS533 Mitsubishi			
Octal D-Type Transparent, Three-State, Inverting				SN74LS259B TI				DM74ALS533 National			
TTL-ALS M74ALS563A Mitsubishi				8-Bit Bistable				DM74ALS563 National			
M74ALS580A Mitsubishi				TTL ML54100 ↑ Lansdale				DM74ALS580 National			
Octal D-Type Transparent, Three-State, Non-Inverting				ML74100 Lansdale				SN54ALS563A * ↑ TI			
TTL-ALS M74ALS573B Mitsubishi				54100 ↑ Rochester				SN54ALS580A ↑ TI			
TTL-F M74F573 Mitsubishi				8-Bit D-Type Read-Back Latch				SN74ALS533 * TI			
Octal D-Type with Readback, Inverting				TTL-ALS SN54ALS996 ♦ ↑ TI				SN74ALS563A * TI			
TTL-ALS SN74ALS867A TI				8-Bit D-Type Transparent, Three-State, Non-Inverting				TTL-AS			
Octal D-Type, Three-State				TTL-F M74F845 ♦ Mitsubishi				DM74AS533 National			
74FR573 National				8-Bit, Edge-Triggered D-Type, Read-Back				DM74AS580 National			
Octal, Transparent				SN74ALS996 * TI				SN74AS533 * TI			
TTL-LS 74LS373 SGS-Thomson				SN74ALS996-1 * TI				SN74AS580 TI			
Octal Transparent Bidirectional				8-Bit, Inverting, Three-State				(Continued)			
TTL-F M74F543 Mitsubishi				TTL-ALS SN74ALS29846 * TI							

† Mil Temp Range (-55° to 125

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Latches (Cont'd)											
8-Bit, Transparent, D-Type, Inverting Three-State (Cont'd)				10-Bit Readback Latch, Non-Inverting				4x4 Register File			
TTL-F	MC54F533	† Motorola		TTL-ALS	SN74ALS994	TI	50	TTL-LS	T74LS170	SGS-Thomson	90
MC74F533		Motorola							T74LS670	SGS-Thomson	
54F533	°† National			10-Bit, Transparent, D-Type, Inverting				8-Bit Feedback Register, Inverting			
54F563	† National			TTL-ALS	SN74ALS842	TI		TTL-ALS	SN74ALS667	TI	
74F533	° National			SN74ALS842-1	TI			8-Bit Feedback Register, Non-Inverting			
74F563	° National			TTL-AS	SN74AS842	TI		TTL-ALS	SN74ALS666	TI	
54F533	† Signetics			TTL-F	74F842	Signetics		8-Bit Multiport Register (RAM with simultaneous read/write)			
74F533	° Signetics			10-Bit, Transparent, D-Type, Non-Inverting				TTL	9338C	National	
74F563	° Signetics			TTL-AS	SN74AS841	° TI	55		9338M	† National	
SN54F533	° TI			TTL-F	54F841	† National		16-Bit (4x4) Register File, Simultaneous Read/Write, Open Collector			
SN74F533	° TI			74F841	National			TTL	54170	† National	95
SN74F563	° TI			74F841	Signetics				74170	National	
				10-Bit, Transparent, D-Type, Non-Inverting (bus interface)					54170	† Signetics	
				TTL-ALS	SN74ALS841	° TI	60		SN54170	† TI	
				TTL	AM29841C	AMD			SN74170	TI	
				Memories				TTL-LS	GD74LS670	GoldStar	100
				Asynchronous FIFO, 16x4					HD74LS170	Hitachi	
				TTL-ALS	SN74ALS232	° TI			SN54LS170	† Motorola	
				Asynchronous First-In, First-Out Memory (16x5)					SN54LS670	† Motorola	
				TTL-ALS	SN74ALS229A	TI			SN74LS170	Motorola	105
				Data Access Register					SN74LS670	Motorola	
				TTL-F	54F407	† National			DM54LS670	† National	
				74F407	° National				DM74LS670	National	
				Dynamic RAM Controller					54LS170	† National	
				FAST	29F68	National	65		54LS670	† National	
				FIFO, 16x5					74LS170	° National	110
				TTL-ALS	SN54ALS229A	°† TI			74LS670	° National	
				FIFO, 64x4					74LS670	° National	
				TTL-ALS	SN54ALS234	°† TI			74LS670	° National	
				SN74ALS236	° TI				74LS670	° National	
				FIFO, 64x8 Asynchronous					74LS670	° National	
				TTL-ALS	SN74ALS2232	° TI			74LS670	° National	
				FIFO, 64x9 Asynchronous					74LS670	° National	
				TTL-ALS	SN74ALS2233	° TI	70		74LS670	° National	
				Memory Address Multiplexer					74LS670	° National	
				TTL-F	74F1762	Signetics			74LS670	° National	
				Memory Mappers					74LS670	° National	
				TTL-LS	SN74LS612	° TI			74LS670	° National	
				RAM, 64-Bit Inverting Output					74LS670	° National	
				TTL-S	AM27S02	AMD			74LS670	° National	
				AM27S03	AMD				74LS670	° National	
				RAM, 64-Bit Non-Inverting Output					74LS670	° National	
				TTL-S	AM27S07	AMD	75		74LS670	° National	
				RAM, 1024x4 (three-state)					74LS670	° National	
				TTL	AM93425	° AMD			74LS670	° National	
				Register File, Dual 16x4					74LS670	° National	
				TTL-ALS	SN74ALS870	TI			74LS670	° National	
				SN74ALS871	TI				74LS670	° National	
				Register File, 10-Bit, Non-Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29821	TI			74LS670	° National	
				Register Stack, 16x4 RAM, Three-State					74LS670	° National	
				TTL-F	N74F410	Signetics	80		74LS670	° National	
				SIPO Shift Register					74LS670	° National	
				TTL-LS	T74LS164	SGS-Thomson			74LS670	° National	
				Static-Column and Page-Mode Detector					74LS670	° National	
				TTL-ALS	SN74ALS6310	° TI			74LS670	° National	
				SN74ALS6311	TI				74LS670	° National	
				Dual Rank 8-Bit Shift Register (8-Bit I/O buffer, "D" register, and serial "B" register)					74LS670	° National	
				TTL-LS	DM86LS52	National	85		74LS670	° National	
				DM86LS62	National				74LS670	° National	
				Dual 16-Word x 4-Bit Register File					74LS670	° National	
				TTL-AS	SN74AS870	° TI			74LS670	° National	
				SN74AS871	° TI				74LS670	° National	
				Octal Storage Register (two stage, 4-Bit wide shift register)					74LS670	° National	
				TTL-LS	SN54LS396	°† TI			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670	° National	
				10-Bit Readback Latch, Inverting					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS994	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS995	TI			74LS670	° National	
				10-Bit Readback Latch, Three-State (bus interface)					74LS670	° National	
				TTL	AM29843C	AMD			74LS670	° National	
				10-Bit D-Type Transparent, Three-State, Non-Inverting					74LS670	° National	
				TTL-F	M74F841	° Mitsubishi			74LS670	° National	
				10-Bit, Inverting, Three-State					74LS670	° National	
				TTL-ALS	SN74ALS29842	TI			74LS670	° National	
				10-Bit, Non-Inverting					74LS670	° National	
				TTL-ALS	SN74ALS29841	TI			74LS670		

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Memories (Cont'd)				Dual 4-Input TTL-S (Cont'd)				Dual 4-Input, Three-State TTL-LS (Cont'd)			
80-Bit (16x5) FIFO Memory	TTL-ALS SN74ALS233A	TI		74S153	Rochester			SN74LS253	Motorola		125
80-Bit (16x5) FIFO Memory, Asynchronous, Three-State	TTL-S 74S225	Signetics		54S153	† Signetics			DM54LS253	† National		
	SN74S225	TI		74S153	Signetics			DM74LS253	National		
256-Bit (64x5) FIFO Memory	TTL-ALS SN74ALS234	TI		SN54S153	† TI		60	54LS253	† National		
320-Bit (64x5) FIFO Memory	TTL-ALS SN74ALS235	TI		SN74S153	TI			74LS253	◊ National		130
Multiplexers (Digital)				Dual 4-Input, Complementary Output TTL				74LS253	Rochester		
Data Selector, 5-Channel (2-to-1)	M66212	Mitsubishi		9309C	National			74LS253	SGS-Thomson		
	M66213	Mitsubishi		9309M	† National		65	54LS253	† Signetics		
Quint 2-Input	TTL-F 74F711	Signetics (3652)		N9309	Signetics			74LS253	Signetics		
Quint 2-Input (with 30 ohm term.)	TTL-F 74F711-1	Signetics (3652)		S9309	† Signetics			SN54LS253	◊† TI		135
Quint 3-Input	TTL-F 74F712	Signetics (3652)	10	Dual 4-Input, Inverting TTL-ALS				SN74LS253	TI		
Quint 3-Input (with 30 ohm term.)	TTL-F 74F712-1	Signetics (3652)		M74ALS352	Mitsubishi			DM54S253	† National		
Synchronous Address	TTL-LS SN74LS783	Motorola		DM74ALS352	National			DM74S253	National		
Dual 1-of-4 Data Selector/Multiplexer	TTL-ALS 74ALS153	Signetics		SN54ALS352	◊† TI		70	74S253	† National		
Dual 4:1 Data Selector/Multiplexer	TTL ML54153	† Lansdale		SN74ALS352	◊ TI			54S253	† Rochester		140
	ML74153	Lansdale	15	SN74AS352	◊ TI			74S253	† Signetics		
Dual 4-Input LS	T74LS153	SGS-Thomson		MC54F352	† Motorola			SN74S253	TI		
TTL	DM54153	† National		MC74F352	Motorola			Dual 4-Line to 1-Line Data Selector/Multiplexer with Strobe			
	DM74153	National		54F352	◊† National		75	TTL-F M74F153	Mitsubishi		
	54153	† National		74F352	◊ National			M74F253	Mitsubishi		145
	74153	National		74F352	◊ Signetics			M74F352	Mitsubishi		
	54153	† Signetics		SN54F352	◊† TI			M74F353	Mitsubishi		
	SN54153	† TI		SN74F352	◊ TI			Dual 8-Input (two 8-to-1 sections) TTL			
	SN74153	TI		SN74LS352	Motorola			DM74LS451	National		80
TTL-ALS	M74ALS153	Mitsubishi		DM54LS352	† National			Quad Data Multiplexer, Non-Inverting			
	DM74ALS153	National		54LS352	† National			TTL-F 74F732	Signetics		
	SN54ALS153	† TI		74LS352	◊ National			74F733	Signetics		
	SN74ALS153	TI		T54LS352	† SGS-Thomson			Quad 1-of-2 Data Selector/Multiplexer, Inverting, Three-State			
TTL-AS	SN74AS153	◊ TI		T74LS352	SGS-Thomson			TTL-ALS 74ALS258	Signetics		150
TTL-F	MC54F153	† Motorola		54LS352	† Signetics			Quad 1-of-2 Data Selector/Multiplexer, Non-Inverting, Three-State			
	MC74F153	Motorola		74LS352	Signetics			TTL-ALS 74ALS257	Signetics		
	54F153	◊† National		SN54LS352	◊† TI			Quad 2-Input			
	74F153	◊ National		SN74LS352	◊ TI			TTL-F M74F157A	Mitsubishi		155
	74F153	◊ Signetics		Dual 4-Input, Inverting, Three-State TTL-ALS				M74F158A	Mitsubishi		
	SN54F153	◊† TI		M74ALS353	National			M74F257A	Mitsubishi		
	SN74F153	◊ TI		DM74ALS353	† TI			M74F258A	Mitsubishi		
TTL-L	54L153	† Rochester		SN54ALS353	◊† TI			MC74F157A	Motorola		
TTL-LS	GD74LS153	GoldStar		SN74ALS353	◊ TI			MC74F158A	Motorola		
	HD74LS153	Hitachi		SN74AS353	◊ TI			74F723	Signetics (3653)		
	SN54LS153	† Motorola		TTL-F	MC54F353	† Motorola		TTL-LS	T54LS157	† SGS-Thomson	160
	SN74LS153	Motorola		MC74F353	Motorola				T54LS158	† SGS-Thomson	
	DM54LS153	◊† National		54F353	◊† National				T54LS258A	† SGS-Thomson	
	DM74LS153	National		74F353	◊ National				T74LS157	SGS-Thomson	
	54LS153	† National		74F353	◊ Signetics				T74LS158	SGS-Thomson	
	74LS153	◊ National		SN54F353	† TI				T74LS257A	SGS-Thomson	
	T74LS253	SGS-Thomson		SN74F353	◊ TI				T74LS258A	SGS-Thomson	165
	74LS153	SGS-Thomson		TTL-LS	SN74LS353	Motorola		Quad 2-Input Data Selector/Multiplexer, Inverting			
	74LS352	SGS-Thomson		54LS353	† National			TTL-ALS 74ALS158	Signetics		105
	74LS353	SGS-Thomson		74LS353	◊ National			Quad 2-Input Data Selector/Multiplexer, Non-Inverting			
	54LS153	† Signetics		T54LS353	† SGS-Thomson			TTL-ALS 74ALS157	Signetics		
	74LS153	Signetics		74LS353	† SGS-Thomson			Quad 2-Input Data Selector/Multiplexer (with LSTTL compatible inputs)			
	SN54LS153	◊† TI		54LS353	† Signetics			HCT MC54HCT157A	† Motorola		
	SN74LS153	◊ TI		74LS353	Signetics			MC74HCT157A	Motorola		
TTL-S	DM54S153	† National		SN54LS353	◊† TI			Quad 2-Input Digital (suitable for driving adders, registers)			
	DM74S153	National		SN74LS353	◊ TI			TTL N8266	Signetics		170
	74S153	National		Dual 4-Input (three-state 54/75153) TTL				S8266	† Signetics		
	54S153	† Rochester		DM8214	National		110	Quad 2-Input, Inverting			
(Continued)				Dual 4-Input, Three-State TTL-ALS				TTL 54158	† Signetics		
				M74ALS253	Mitsubishi			74158	Signetics		
				DM74ALS253	National			TTL-ALS M74ALS158	Mitsubishi		175
				74ALS253	Signetics			SN54ALS158	◊† TI		
				SN54ALS253	† TI			SN74ALS158	◊ TI		
				SN74ALS253	TI			TTL-AS	DM74AS158	National	
				TTL-F	MC54F253	† Motorola		SN74AS158	◊ TI		
				MC74F253	Motorola			TTL-F	MC54F158	† Motorola	180
				54F253	◊† National			MC74F158	Motorola		
				74F253	◊ National			(Continued)			
				74F253	◊ Signetics						
				SN54F253	† TI						
				SN74F253	◊ TI						
				TTL-LS	HD74LS253	Hitachi					
				SN54LS253	† Motorola						
				(Continued)							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multiplexers (Digital) (Cont'd)				Quad 2-Input Multiplexer				Quad 2-Input, Non-Inverting, Three-State			
Quad 2-Input, Inverting				TTL-F N74F158A ° Signetics				TTL-LS (Cont'd)			
TTL-F				Quad 2-Input, Non-Inverting				54LS257A † National			
54F158 °† National				TTL				74LS257 National			
74F158 °† National				DM54157 † National				74LS257 Rochester			
54F158 † Signetics				DM8322 National				74LS257 SGS-Thomson			
74F158 °† Signetics				DM9322 † National				54LS257A † Signetics			
SN54F158A °† TI				54157 °† National				74LS257A Signetics			
SN74F158A ° TI				74157 National				SN54LS257B °† TI			
SN74F158A ° TI				9322C National				SN74LS257B ° TI			
TTL-LS				9322M † National				TTL-S			
GD74LS158 GoldStar				54157 † Rochester				DM54S257 † National			
HD74LS158 Hitachi				74157 Rochester				DM74S257 National			
SN54LS158 † Motorola				N9322 Signetics				74S257 National			
SN74LS158 Motorola				S8233 † Signetics				74S257 Rochester			
DM54LS158 † National				54157 † Signetics				54S257 † Signetics			
DM74LS158 National				74157 Signetics				74S257 Signetics			
54LS158 † National				SN54157 † TI				SN54S257 † TI			
74LS158 ° National				SN74157 TI				SN74S257 TI			
74LS158 Rochester				TTL-ALS				Quad 2-Input, (three-state 54/74157)			
54LS158 † SGS-Thomson				M74ALS157 Mitsubishi				TTL			
74LS158 † SGS-Thomson				SN54ALS157 °† TI				DM7123 National			
74LS158 † Signetics				SN74ALS157 ° TI				DM8123 † National			
54LS158 † Signetics				TTL-AS				7123 Rochester			
74LS158 † Signetics				TTL-F				8123 Rochester			
SN54LS158 °† TI				MC54F157 † Motorola				Quad 2-Input with Output Register			
SN74LS158 ° TI				MC74F157 Motorola				TTL			
TTL-S				54F157 °† National				54298 † National			
DM54S158 † National				74F157 °† National				74298 Rochester			
DM74S158 National				54F157 °† Signetics				54298 † Signetics			
74S158 National				74F157 ° Signetics				SN54298 † TI			
54S158 † Rochester				SN54F157A °† TI				SN74298 TI			
74S158 Rochester				SN74F157A ° TI				TTL-AS			
54S158 † Signetics				TTL-L				SN74AS298 ° TI			
74S158 Signetics				TTL-LS				54F298 °† National			
SN54S158 † TI				54L157 † Rochester				54F398 † National			
SN74S158 TI				GD74LS157 GoldStar				54F399 °† National			
Quad 2-Input, Inverting, Open Collector				HD74LS157 Hitachi				74F298 ° National			
TTL				SN54LS157 † Motorola				74F398 ° National			
N8234 Signetics				SN74LS157 Motorola				74F399 °† National			
S8234 † Signetics				DM54LS157 † National				74F298 Signetics			
Quad 2-Input, Inverting, Three-State				DM74LS157 National				74F398 Signetics			
TTL-ALS				54LS157 † National				74F399 ° Signetics			
M74ALS258 Mitsubishi				74LS157 ° National				TTL-LS			
DM74ALS258 National				54LS157 † SGS-Thomson				HD74LS298 Hitachi			
SN54ALS258 °† TI				74LS157 † SGS-Thomson				SN54LS298 † Motorola			
SN74ALS258 ° TI				54LS157 Signetics				SN54LS398 † Motorola			
TTL-AS				74LS157 Signetics				SN54LS399 † Motorola			
DM74AS258 National				SN54LS157 °† TI				SN74LS298 Motorola			
SN74AS258 ° TI				SN74LS157 ° TI				SN74LS398 Motorola			
TTL-F				TTL-S				SN74LS399 Motorola			
MC54F258 † Motorola				DM54S157 † National				54LS298 † National			
MC74F258 Motorola				DM74S157 National				74LS298 ° National			
54F258 °† National				74S157 National				54LS298 † SGS-Thomson			
74F258 °† National				54S157 † Rochester				74LS298 † SGS-Thomson			
54F258 °† Signetics				74S157 Rochester				54LS298 † Signetics			
74F258 °† Signetics				54S157 † Signetics				74LS298 † Signetics			
SN54F258 °† TI				74S157 Signetics				SN54LS298 °† TI			
SN74F258 ° TI				SN54S157 † TI				SN54LS399 °† TI			
TTL-LS				SN74S157 TI				SN74LS298 ° TI			
HD74LS258 Hitachi				Quad 2-Input, Non-Inverting, Three-State				SN74LS399 ° TI			
SN54LS258A † Motorola				TTL-ALS				TTL-S			
SN74LS258A Motorola				M74ALS257 Mitsubishi				AM25S09C AMD			
DM54LS258B † National				DM74ALS257 National				AM25S09M † AMD			
DM74LS258B National				DM74AS257 National				Quad 2-Input (with 30 ohm term.)			
54LS258A † National				SN54ALS257 °† TI				TTL-F			
74LS258 National				SN74ALS257 ° TI				74F723-1 Signetics (3653)			
74LS258 Rochester				TTL-AS				Quad 2-Input, Three-State			
54LS258 † SGS-Thomson				TTL-F				TTL-F			
74LS258 † SGS-Thomson				MC54F257 † Motorola				MC74F257A Motorola			
54LS256 † Signetics				MC74F257 Motorola				MC74F258A Motorola			
54LS258A † Signetics				54F257 °† National				Quad 2-Port			
74LS258A Signetics				74F257 °† National				TTL-F			
SN54LS258B °† TI				54F257 °† Signetics				MC54F398 † Motorola			
SN74LS258B ° TI				74F257 °† Signetics				MC54F399 † Motorola			
TTL-S				SN54F257 °† TI				MC74F398 Motorola			
DM54S258 † National				SN74F257 ° TI				MC74F399 Motorola			
DM74S258 National				TTL-LS				Quad 2-to-1 Multiplexer, Inverting			
74S258 † Rochester				GD74LS257A GoldStar				TTL-F			
74S258 Rochester				HD74LS257 Hitachi				N74F258A ° Signetics			
54S258 † Signetics				SN54LS257A † Motorola				Quad 2-to-1 Multiplexer, Non-Inverting			
74S258 Signetics				SN74LS257A Motorola				TTL-F			
SN54S258 † TI				DM54LS257B † National				N74F257A ° Signetics			
SN74S258 TI				DM74LS257B National				Quad 3-Input			
								TTL-F			
								74F725 Signetics (3653)			

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multiplexers (Digital) (Cont'd)				8-Input, Complementary Output, Strobe TTL-S (Cont'd)				16-Input, Inverted Output, Strobe TTL (Cont'd)			
Quad 3-Input (with 30 ohm term.)				54S151	† Signetics			54150	† National		125
TTL-F 74F725-1	Signetics (3653)			74S151	Signetics		65	74150	National		
Quad 4-Input				SN54S151	† TI			74150	Rochester		
TTL-LS DM74LS453	National			SN74S151	TI			54150	† Signetics		
Hex 2-Input, Three-State								74150	Signetics		
TTL-ALS SN54ALS857	† TI			8-Input, Inverted Output				SN54150	† TI		130
SN74ALS857	TI			TTL 74152	Rochester			SN74150	TI		
TTL-AS SN74AS857	TI			TTL-LS HD74LS152	Hitachi		70				
4-to-1 Data Selector/Multiplexer				54LS152	† National			TTL-LS DM74LS450	National		
TTL-AS SN74AS253	° TI			T74LS152	SGS-Thomson			16-Input, Inverting Output, Three-State			
8-Bit Data Selector/Multiplexer				8-Input Multiplexer				TTL-AS SN74AS250	TI		
TTL ML54151	† Lansdale			TTL-F N74F151	° Signetics			16-to-1 Multiplexer			
ML54152	† Lansdale			N74F151A	° Signetics			TTL-AS SN54AS250A	°† TI		
ML74151	Lansdale			N74F251A	° Signetics						
ML74152	Lansdale		10	TTL-LS 74LS152	Rochester			Multivibrators			
54151	† Rochester			T54LS151	† SGS-Thomson			Bidirectional Monostable (low level input)			
54152	Rochester			74LS152	SGS-Thomson			TTL N8T20	Signetics		135
8-Input				8-Input Multiplexer/Data Selector/Register, Complementary Output, Three-State				Monostable, Schmitt Trigger Input			
TTL-ALS 74ALS151	Signetics			TTL-LS SN54LS356	°† TI			TTL DM54121	† National		
TTL-F M74F151A	Mitsubishi			SN74LS354	TI			54121	† National		
M74F251A	Mitsubishi			SN74LS356	° TI			74121	National		
TTL-LS T74LS151	SGS-Thomson		15					74121	Rochester		
T74LS251	SGS-Thomson			8-Input, Strobe, Complementary Output, Three-State				54121	† Signetics		140
8-Input, Complementary Output				TTL-F SN54F251	°† TI			74121	Signetics		
TTL 9312C	National			8-Input, Strobe, Complementary Output, Three-State				SN54121	† TI		
9312M	† National			TTL 54251	† Rochester			SN74121	TI		
TTL-S S82S30	† Signetics			74251	Rochester			Retriggerable Monostable			
S82S31	† Signetics			SN54251	† TI			TTL DM8601	National		
S82S32	† Signetics		20	SN74251	TI			DM9601	† National		145
8-Input, Complementary Output, Open Collector				TTL-ALS M74ALS251	Mitsubishi			9601C	National		
TTL 9313	Rochester			DM74ALS251	National			9601M	† National		
8-Input, Complementary Output, Strobe				SN54ALS251	°† TI			Retriggerable Monostable with Clear			
TTL DM54151A	† National			SN74ALS251	° TI			TTL 54122	† National		
DM74151A	National			TTL-AS SN74AS251	° TI			74122	National		
54151	† National			TTL-F MC54F251	† Motorola			74122	Rochester		150
74151	National			MC74F251	Motorola			SN54122	† TI		
74151	Rochester			54F251A	°† National			SN74122	TI		
54151	† Signetics			74F251	° National						
74151	Signetics			74F251	° Signetics			TTL-L 54L122	† Rochester		
SN54151A	† TI			SN74F251	° TI			TTL-LS HD74LS122	Hitachi		
SN74151A	TI							SN54LS122	† Motorola		155
TTL-ALS M74ALS151	Mitsubishi			TTL-LS HD74LS251	Hitachi			SN74LS122	Motorola		
DM74ALS151	National			SN54LS251	† Motorola			DM74LS122	National		
SN54ALS151	† TI			SN74LS251	† National			SN54LS122	°† TI		
SN74ALS151	TI			DM74LS251	National			SN74LS122	TI		
TTL-AS SN74AS151	° TI			74LS251	° National			Retriggerable Monostable, with Reset			
TTL-F MC54F151	† Motorola			74LS251	Rochester			TTL 9600	Rochester		160
MC74F151	Motorola			74LS251	SGS-Thomson			Dual Monostable, Schmitt-Trigger Input (dual 54/74121)			
54F151	°† National			74LS251	Signetics			TTL 54221	† Rochester		
74F151	° National			SN54LS251	°† TI			54221	† Signetics		
74F151	° Signetics			SN74LS251	° TI			SN54221	† TI		
SN54F151	° TI							SN74221	TI		
SN74F151	° TI			TTL-S DM54S251	† National						
				DM74S251	National			TTL-LS HD74LS221	Hitachi		165
				54LS251	† Signetics			SN54LS221	† Motorola		
				74S251	† Signetics			SN74LS221	Motorola		
				SN54S251	† TI			DM54LS221	† National		
				SN74S251	TI			DM74LS221	National		
								54LS221	† Signetics		170
				8-Input, Three-State				SN54LS221	TI		
				TTL-ALS 74ALS251	Signetics			SN74LS221	TI		
				8-to-1 Multiplexer				Dual Retriggerable Monostable with Clear (AND triggered)			
				TTL-F SN74F151A	° TI			TTL DM74123	National		
				SN74F251A	° TI			54123	† National		
				16-Bit Data Selector/Multiplexer				74123	National		175
				TTL ML54150	† Lansdale			74123	Rochester		
				ML74150	Lansdale			54123	† Signetics		
				54150	† Rochester			74123	Signetics		
				16-Input, Complementary Output, Three-State				SN54123	† TI		
				TTL-AS SN74AS850	TI			SN74123	TI		180
				SN74AS851	TI						
				16-Input, Inverted Output, Strobe				TTL-L 54L123	Rochester		
				TTL DM54150	† National			TTL-LS GD74LS123	GoldStar		
				DM74150	National			HD74LS123	Hitachi		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Multivibrators (Cont'd)								4-Bit Parallel-In, Parallel Out, Right/Left (Cont'd)			
Dual Retriggerable Monostable with Clear (AND triggered)				Quad 2-Input Multiplexer with Storage				45			
TTL-LS (Cont'd)				TTL ML54298 † Lansdale				TTL-AS SN74AS95 TI			
SN54LS123 † Motorola				ML74298 † Lansdale				TTL-LS HD74LS95B Hitachi			
SN74LS123 Motorola								SN54LS95B † Motorola			
DM74LS123 National				Quad 2-Port Register				SN74LS95B Motorola			
SN54LS123 *† TI				TTL-LS T74LS298 SGS-Thomson				54LS95B † National			
SN74LS123 * TI				T74LS399 SGS-Thomson				74LS95B † National			
				74LS399 SGS-Thomson				54L95 † Rochester			
				Hex Parallel D Register				74LS95B SGS-Thomson			
				TTL-LS 74LS378 SGS-Thomson				54LS95B † Signetics			
								74LS95B Signetics			
								SN54LS95B *† TI			
								SN74LS95B TI			
Dual Retriggerable Monostable with Reset (OR triggered)				Decade Counter							
TTL DM8602 National				TTL ML5490A † Lansdale							
DM9602 † National				ML7490A † Lansdale							
96L02C National											
96L02M † National											
9602C National											
9602M † National											
9602 Rochester											
N9602 Signetics											
S9602 † Signetics											
TTL-LS 96LS02C † National											
96LS02M *† National											
TTL-S AM26S02C AMD											
AM26S02M † AMD											
96S02C National											
96S02M † National											
Dual Voltage-Controlled											
TTL MC4024 Motorola											
MC4324 † Motorola											

DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Shift Registers (Cont'd)												
5-Bit (Parallel-in, Parallel-out)				8-Bit Parallel-In, Parallel-Out, Unidirectional				8-Bit Serial-In, Parallel-Out Register with Output Latches				
TTL	ML5496	† Lansdale	5	TTL	54199	† Rochester	65	TTL-F	54F595	† National	125	
	ML7496	Lansdale			74199	Rochester			74F595	National		
	5496	Rochester			54199	† Signetics			74F595	Signetics		
	7496	Rochester			74199	Signetics						
	5496	† Signetics			SN54199	† TI			TTL-LS	SN54LS595		† TI
	SN5496	† TI			SN74199	TI				SN74LS594		TI
	SN7496	TI							SN74LS595	TI		
				TTL-F	74F199	Signetics			SN74LS599	TI		
TTL-L	54L96	† Rochester	10	8-Bit Parallel-In, Parallel-Out, Three-State, with Positive Edge-Triggered D-Type Flip Flops (bus interface)			8-Bit Serial-In, Serial-Out				130	
TTL-LS	54LS96	† Signetics		TTL	AM29825C	AMD	TTL	5491	† Rochester			
	74LS96	Signetics						SN5491A	† TI			
	SN54LS96	† TI			8-Bit Parallel-In/Serial-Out			TTL-L	54L91	† Rochester		
	SN74LS96	TI		TTL-ALS	DM54ALS165	† National		TTL-LS	HD74LS91	Hitachi		
					DM74ALS165	National			SN54LS91	† TI	135	
									SN74LS91	TI		
8-Bit				8-Bit Parallel-In, Serial-Out, Complementary Output			8-Bit Synchronous with Parallel Load, Load Complement, Preset, Clear and Hold					
TTL	ML5491A	† Lansdale	15	TTL	54165	† National	75	TTL-LS	DM74LS380	National		
	ML7491A	Lansdale			74165	National						
	7491	Rochester			74165	Rochester						
					54165	† Signetics						
TTL-F	M74F164	◊ Mitsubishi			SN54165	† TI						
TTL-LS	T54LS170	† SGS-Thomson			SN74165	TI						
	T54LS273	† SGS-Thomson	20									
	T74LS166	SGS-Thomson		TTL-ALS	SN54ALS165	◊† TI						
	54LS273	† SGS-Thomson			SN74ALS165	TI						
	74LS166	SGS-Thomson										
8-Bit Diagnostic/Pipeline				TTL-L			54LS165A	† Rochester				
TTL-ALS	SN74ALS29818	TI		TTL-LS	HD74LS165A	Hitachi		TTL-AS	SN74ALS299	TI		
8-Bit Gated Serial-In, Parallel-Out				SN54LS165			† Motorola		TTL-F	54F323	*† National	145
TTL	DM74164	National		SN74LS165	Motorola				74F299	* National		
	DM8570	National		54LS165	† National				74F323	◊ National		
	54164	◊† National		74LS165	◊ National				74F299	◊ Signetics		
	74164	National	25	SN54LS165A	◊† TI				74F323	◊ Signetics		
	54164	† Rochester			SN74LS165A	* TI				SN54F299	*† TI	150
	74164	Rochester								SN74F299	* TI	
	54164	† Signetics			8-Bit Parallel-In, Serial-Out with Clear					SN74F323	* TI	
	74164	Signetics			TTL	DM74166	National					
	SN54164	*† TI			54166	† Rochester						
	SN74164	* TI		74166	Rochester							
				54166	† Signetics							
				74166	Signetics							
				SN54166	† TI							
				SN74166	TI							
						</						

DIGITAL-TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Shift Registers (Cont'd)				A/D Converter, 8-Bit, 25 MSPS	THC1068	‡ TRWLSI		FIFO RAM Emulator (12-Bit address)	TTL-LS N8X60	Signetics	
10-Bit Serial-In, Parallel-Out	TTL N8273	Signetics		Bidirectional Bus Extender and Repeater, Asynchronous	TTL N8X41	Signetics		GPB Adapter (IEEE 488 bus) See also Microprocessor			
	S8273	† Signetics						Peripheral	TTL-LS 96LS488	Rochester	85
16-Bit Parallel Out, Serial In (ECL)	SLS6316	STC		Bus Arbiter	IL8289	† Lansdale (3549)		GPB Data Transceiver See also Microprocessor			
	SLS6416	STC		Bus Arbiter, 4-Input Asynchronous	TTL-F 74F786	Signetics		Peripherals	TTL-F 54F588	† National	
16-Bit Parallel-In, Serial Out (ECL)	SLS6016	STC	5		74F588	◊ National			74F588	◊ National	
	SLS6216	STC		Crossbar Switch	TTL-S SN74S8840	Ti	45	I/O Register Array (16x8 or 8x16)	TTL-LS N8X320	Signetics	
16-Bit Parallel-In, Serial-Out	TTL-F 54F674	† National		Cyclic Redundancy Checker	TTL 9401C	National		Identity Comparator/Decoder, Fuse Programmable	TTL-ALS SN74ALS812	Ti	
	74F674	National			9401M	† National		Image Filter, 65K x 65K Pixels, 11-Bit x 10-Bit, 30 MHz	TMC2246	TRWLSI	90
	74F674	Signetics			N8X01A	Signetics		Image Filter, 65K x 65K Pixels, 11-Bit x 10-Bit, 40 MHz	TMC2246-1	TRWLSI	50
	TTL-LS SN54LS674	◊† Ti	10		N9401	Signetics		Line Receiver	MC3550	† Ti	
	SN74LS674	Ti		D/A Converter, 10-Bit, 20 MHz	TDC1041	◊‡ TRWLSI			MC3552	† Ti	
16-Bit Serial/Parallel-In, Serial Out	54F676	◊ National		D/A Converter and RAM, Triple 6-Bit, 40 MHz	TMC0171-4	TRWLSI			MC3553	† Ti	
	74F676	◊ National			TMC0176-4	TRWLSI		Memory Mapper, Expands 4 Address Lines to 12			
	TTL-F 74F676	Signetics		D/A Converter and RAM, Triple 6-Bit, 50 MHz	TMC0176-5	TRWLSI		Address Lines	TTL-LS GD74LS612	GoldStar	95
16-Bit Serial-In, Serial/Parallel Out	54F675	† National	15	D/A Converter and RAM, Triple 6-Bit, 66 MHz	TMC0176-6	TRWLSI			SN54LS610	† Ti	
	74F675	◊ National			TMC0176-8	TRWLSI			SN74LS610	Ti	
16-Bit Serial-In, Serial-Out Register plus Stored Parallel	TTL-F 54F673	† National		D/A Converter and RAM, Triple 6-Bit, 80 MHz	TMC0176-8	TRWLSI			SN74LS611	Ti	
Output	74F673	◊ National		DACRAM, Triple 8-Bit, Multiplexed Inputs, 110 MHz	TMC0458-110	TRWLSI			SN74LS612	◊ Ti	100
	TTL-LS SN54LS673	◊† Ti			TMC0458-125	TRWLSI			SN74LS613	Ti	
Translators				DACRAM, Triple 8-Bit, Multiplexed Inputs, 125 MHz	TMC0458-125	TRWLSI		Microprogram Sequencer	TTL-LS AM2909A	AMD	
TTL to 10K ECL with latch	DP8481	National	20	DACRAM, Triple 8-Bit, Multiplexed Inputs, 135 MHz	TMC0458-135	TRWLSI			AM2909M	† AMD	
TTL to 100K ECL with latch	DP8483	National		DACRAM, Triple 8-Bit, Multiplexed Inputs, 165 MHz	TMC0458-165	TRWLSI			AM2911A	◊ AMD	
TTL-to-				DACRAM, Triple 8-Bit, Multiplexed Inputs, 80 MHz	TMC0458-80	TRWLSI	60		M3001	Intel	105
OKH ECL, 11-Bit (27MHz Video Net)	BT296	Brooktree		Delay Element	TTL-LS SN74LS31	Ti			IDM2909AC	National	
Dual TTL to MOS Voltage	TTL D139A	† Siliconix		Delay Line Module, 5-Tap (30,60,90,120,150 ns)	BTTLDL150	Technitrol			IDM2911AC	National	
Dual 2-input NAND TTL to MOS Voltage	TTL μA962AM	† National		Display Driver	SN55563A	◊† Ti	25	Microsequencer	TTL-AS SN54AS890	◊† Ti	
	DH0034	† National			SN55564A	◊† Ti			SN74AS890	◊ Ti	
	DH0034C	National		DRAM Controller, Intelligent (IDC)	TTL-F 74F1763	Signetics	65	Multimode Associative Stack	TTL-S DP8402	National	
	DS7800	† National		DRAM Dual-Ported Controller	TTL-F 74F764-1	◊ Signetics		Optically Coupled Digital Filter (RFI rejection to 80 dB up to 1 GHz)	66079	† Micropac	115
	DS8800	National			74F765	Signetics		Oscillator Clock/Driver	TTL-LS 74LS321	Rochester	
Hex TTL to MOS Voltage	TTL DS78L12	‡ National	30		74F765-1	Signetics			SN54LS320	† Ti	
	DS88L12	National		DRAM Dual-Ported Controller (1 Mbit)	TTL-F 74F1764	◊ Signetics (3654)	70	Phase Locked Loop	SN54LS321	† Ti	
Hex TTL-to-ECL Translator	100124	Signetics			74F1764-1	◊ Signetics (3654)			SN74LS321	† Ti	
Octal 10KH ECL to TTL and TTL to 10KH ECL	BT501	Brooktree			74F1765	◊ Signetics (3654)			SN74LS321	Ti	
Octal 100K ECL to TTL and TTL to 100K ECL	BT502	Brooktree (3406)		Driver, Dual (TTL level to MOSFETs)	CS2706	Cherry Semi		Phase Frequency Detector	TTL MC4044	Motorola	120
7-Unit MOS to TTL Level Converter	TTL SN75270	Ti			CS3706	Cherry Semi			MC4344	† Motorola	
Miscellaneous				Dynamic Memory Controller	TTL-ALS SN74ALS6301	◊ Ti	75	Pipeline Register, 8-Bit, Diagnostic	TTL-ALS SN74ALS819	Ti	
A/D Converter, 10-Bit, 1.8μS	TMC1061	◊ TRWLSI	35		SN74ALS6302	◊ Ti		Port Controller, Universal, 8-Bit	AS SN74AS852	Ti	125
A/D Converter, 10-Bit, 25 MSPS	THC1070	‡ TRWLSI		Dynamic RAM Refresh Controller	MB1422A	Fujitsu			SN74AS856	Ti	
A/D Converter, 12-Bit, 13.8μS	TMC1241	TRWLSI		Error Correction and Detection Unit, 64-Bit	TTL-AS SN74AS6364	◊ Ti		Processor, 8-Bit Microcodeable	TTL-AS SN74AS887	Ti	
	TMC12441	TRWLSI		Error Correction Chip (ECC)	TTL-LS MB1412A	Fujitsu	80	Pulse-Width Regulator (5 ns output)	TTLPW005	Technitrol	
A/D Converter, 12-Bit, 7.7μS	TMC1251	TRWLSI			MB1426	Fujitsu		Pulse-Width Regulator (10 ns output)	TTLPW010	Technitrol	
	TMC12551	TRWLSI	40	Error Detection and Correction Circuit	TTL-F MC74F2960	◊ Motorola		Pulse-Width Regulator (15 ns output)	TTLPW015	Technitrol	130
					MC74F2960A	◊ Motorola					
				Error Detection and Correction Circuit, 16-Bit Parallel	TTL-LS SN54LS630	◊† Ti					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Dual Pulse Synchronizer/Driver				Quad 2-Input NAND Schmitt-Trigger			
Pulse-Width Regulator (20 ns output)	TTLPW020	Technitrol		TTL	ML54120	† Lansdale		TTL-LS	SN54LS132	◊† TI	
Pulse-Width Regulator (25 ns output)	TTLPW025	Technitrol			ML74120	Lansdale			SN74LS132	TI	
Pulse-Width Regulator (30 ns output)	TTLPW030	Technitrol			SN54120	† TI		TTL-S	74S132	National	105
Pulse-Width Regulator (35 ns output)	TTLPW035	Technitrol		Dual Voltage Controlled Oscillator (or crystal controlled)			45		SN54S132	† TI	
Pulse-Width Regulator (40 ns output)	TTLPW040	Technitrol		TTL-S	SN54LS626	◊† TI			SN74S132	TI	
Pulse-Width Regulator (45 ns output)	TTLPW045	Technitrol			SN54LS629	◊† TI		Quad 2-Input 30-Ohm Transmission Line Driver			
Pulse-Width Regulator (50 ns output)	TTLPW050	Technitrol			SN74LS625	TI		TTL-F	54F3037	† Signetics	
Pulse-Width Regulator (60 ns output)	TTLPW060	Technitrol			SN74LS629	TI			74F3037	* Signetics	110
Pulse-Width Regulator (70 ns output)	TTLPW070	Technitrol		Dual 4-Input Expander					74F3038	* Signetics	
Pulse-Width Regulator (75 ns output)	TTLPW075	Technitrol		TTL-H	54H60	† Rochester		Hex Schmitt Trigger, Inverting			
Pulse-Width Regulator (100 ns output)	TTLPW100	Technitrol		Dual 4-Input NAND Schmitt-Trigger			50	TTL	DM5414	† National	
Pulse-Width Regulator (150 ns output)	TTLPW150	Technitrol		TTL	7413	Rochester			DM7414	National	
Pulse-Width Regulator (200 ns output)	TTLPW200	Technitrol			5413	† Signetics			7414	National	115
Pulse-Width Regulator (250 ns output)	TTLPW250	Technitrol			SN5413	† TI			7414	Rochester	
Pulse-Width Regulator (300 ns output)	TTLPW300	Technitrol			SN7413	TI			5414	† Signetics	
Pulse-Width Regulator (400 ns output)	TTLPW400	Technitrol		TTL-ALS	DM74ALS13	National			7414	Signetics	
Pulse-Width Regulator (500 ns output)	TTLPW500	Technitrol		TTL-F	54F13	*† National	55		SN5414	† TI	
RAMDAC, Triple 6-Bit, 35 MHz, 256x18 LUT	TMC0171	◊ TRWLSI			74F13	* National			SN7414	TI	
Read-Back Transceiver					74F13	* Signetics		TTL-ALS	DM74ALS14	National	120
FAST	54F702	† National		TTL-LS	HD74LS13	Hitachi			54F14	*† National	
74F702		National			SN54LS13	† Motorola	60		74F14	* National	
Register/Counter/Comparator					SN74LS13	Motorola			74F14	* Signetics	
FAST	54F701	† National			54LS13	† National		TTL-LS	GD74LS14	GoldStar	
74F701		National			74LS13	◊ National			HD74LS14	Hitachi	125
Synchronous Decade Rate Multiplier					T54LS13	† SGS-Thomson			SN54LS14	† Motorola	
TTL	54167	† Rochester			T74LS13	SGS-Thomson	65		SN74LS14	Motorola	
	74167	Rochester			54LS132	† SGS-Thomson			DM74LS14	National	
	SN54167	† TI			74LS132	SGS-Thomson			54LS14	† National	130
	SN74167	TI			54LS13	† Signetics			74LS14	◊ National	
Trajectory Generator (for Winchester disk drives)					74LS13	Signetics			74LS19	Rochester	
ML414		MicroLinear			SN54LS13	◊† TI	70		54LS14	† SGS-Thomson	
TTL-ECL Register, 8-Bit (400 MHz)					SN74LS13	* TI			74LS14	† Signetics	
FAST	54F707	† National		TTL-S	54S13	† Signetics			74LS14	Signetics	135
75F707		National		Dual 4-Input 30-Ohm Transmission Line Driver					SN54LS14	◊† TI	
Voltage Comparator (analog input-digital output)				TTL-F	54F3040	† Signetics			SN74LS14	* TI	
TTL-S	AM686C	◊ AMD			74F3040	* Signetics			SN74LS19	TI	
AM686M		◊† AMD		Triple 3-Input Expander (for H52)			75	Octal Flip-Flop with Serial Scanner			
Voltage Controlled Oscillator (or crystal controlled)				TTL-H	54H61	† Rochester		FAST	54F978	† National	
TTL-LS	SN54LS624	◊† TI			74H61	Rochester			74F978	National	
SN54LS628	◊† TI			Quad Complementary-Output Elements (for symmetrical generation of complementary outputs)				Octal Trapezoidal Repeater			
SN74LS624	TI			TTL	74265	Rochester		TTL-S	DS3898	National	140
SN74LS628	TI				SN54265	† TI					
Binary-To-BCD Converter					SN74265	TI		3-2-2-3-Input AND-OR Expander (for H50, H53, H55)			
TTL	DM74185A	National		Quad Differential Backplane Transceiver				TTL-H	54H62	† Rochester	
54185		† Rochester		TTL-LS	AM26LS38	AMD			74H62	Rochester	
74185		Rochester		Quad S-R Latch			80	4-Bit Parallel Universal Bus Transceiver, Storage, Three-State			
BCD-To-Binary Converter				TTL-LS	T54LS279	† SGS-Thomson		TTL-S	54S226	† Rochester	
TTL	DM74184	National		Quad 2-Input NAND Schmitt Trigger				4-Bit Priority Register, Cascadable			
74184		Rochester		TTL-F	MC54F132	† Motorola		TTL	SN54278	† TI	
					MC74F132	Motorola			SN74278	TI	145
				Quad 2-Input NAND Schmitt-Trigger				4-Bit Shifter, Three-State (shifts 0, 1, 2, or 3-bits under 2-line select control)			
				TTL	DM54132	† National		TTL-S	AM25S10C	AMD	
					DM74132	National			AM25S10M	† AMD	
					74132	National		4-Bit True/Complement Zero/One Element			
					74132	Rochester		TTL-H	54H87	Rochester	
					54132	† Signetics			74H87	Rochester	
					SN54132	† TI		6-Bit Synchronous Binary Rate Multiplier			
					SN74132	TI		TTL	5497	† National	150
				TTL-ALS	DM74ALS132	National			7497	National	
				TTL-F	54F132	National			SN5497	† TI	
					74F132	Signetics			SN7497	TI	
					74F132	Signetics		8-Bit Bidirectional I/O Port, Latched, Addressable			
				TTL-LS	HD74LS132	Hitachi		TTL-S	N8T31	Signetics	155
					SN54LS132	† Motorola	95		N8T32	Signetics	
					SN74LS132	Motorola			N8T33	Signetics	
					DM54LS132	† National			N8T36	Signetics	
					DM74LS132	National			S8T33	† Signetics	
					74LS132	◊ National			S8T35	† Signetics	
					54LS132	† Signetics			S8T36	† Signetics	160
					54LS132A	† Signetics			S8T39	† Signetics	
					74LS132	Signetics	100				

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—TTL (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line		
Miscellaneous (Cont'd)				9-Bit Odd/Even Parity Generator/Checker (Cont'd)					
8-Bit Successive Approximation Register				TTL-LS					
TTL	DM2502C	National	5		SN54LS280	◊*† TI	70		
	DM2502M	† National			SN74LS280	◊ TI			
	DM2503C	National			TTL-S				
	DM2503M	† National			AM82S62C	AMD	75		
	2502	Rochester			AM82S62M	† AMD			
	2503	Rochester			DM54S280	† National			
	7603	Rochester			DM74S280	National			
	7605	Rochester			93S62	Rochester			
	8603	Rochester			N82S62	Signetics			
	8605	Rochester			54S280	† Signetics			
				74S280	Signetics				
			10		SN54S280	† TI	80		
					SN74S280	TI			
TTL-LS				9-Bit Parity Generator/Checker with Parity I/O Port					
	54LS502	† National		TTL-AS	DM74AS286	National			
	54LS503	† National			SN74AS286	TI			
	74LS502	◊ National		10-Bit Priority Encoder					
	74LS503	◊ National		TTL	54147	† Signetics	85		
8-Input Priority Encoder					SN74147	TI			
	MC54F148	† Motorola	15		TTL-LS				
	MC74F148	Motorola			SN74LS147	Motorola	90		
TTL	DM54148	† National			SN54LS147	◊† TI			
	DM74148	National			SN74LS147	TI			
	DM8318	National		20	12-Bit Schottky Barrier Diode				
	DM9318	† National				TTL-S	SN74S1050	TI	95
	9318C	National					SN74S1051	TI	
	9318M	† National				12-Bit Successive Approximation Register			
	54148	† Rochester				TTL	DM2504C	National	95
	9318	Rochester					DM2504M	† National	
	54148	† Signetics				2504	Rochester		
	SN54148	† TI				7604	Rochester		
	SN74148	TI				8604	Rochester		
TTL-F						12-Input Odd/Even Parity Checker/Generator			
	54F148	◊† National	30	TTL	9348C	National	100		
	74F148	◊ National			9348M	† National			
	74F148	Signetics			9348	Rochester			
	SN74F148	TI			TTL-S				
					AM93S48C	AMD	105		
					AM93S48M	† AMD			
TTL-LS					16-Bit Schottky Barrier Diode				
	HD74LS148	Hitachi		35	TTL-S	SN74S1052	TI	110	
	SN54LS148	† Motorola					SN74S1053		TI
	SN74LS148	Motorola				16-Bit Shift Register, Video, Parallel In Serial Out (ECL)			
	SN74LS748	Motorola				SLS6216	STC	115	
	T74LS148	SGS-Thomson			ECL	SLS6016	STC		
	SN54LS148	◊† TI			16-Bit Shift Register, Video, Parallel Out, Serial In (ECL)				
	SN74LS148	TI				SLS6316	STC	120	
						SLS6416	STC		
8-Input Priority Encoder, Three-State						16-Bit Shift Register, Video, Parallel-In, Parallel Out			
TTL-LS	SN54LS848	† Motorola	40			DP8515	National	125	
	SN74LS348	Motorola			DP8515-350	National			
	SN74LS848	Motorola			DP8516	National			
	SN54LS348	*† TI			DP8516-350	National			
	SN74LS348	* TI			16-Stage Programmable Counter/Divider				
9-Bit Odd/Even Parity Generator/Checker					54F525	† National	130		
TTL	T54LS280	† SGS-Thomson			74F525	◊ National			
	DM54180	† National		45	32-Bit Parallel Error Correction and Detection Circuit				
	DM74180	National				TTL-AS	SN74AS632	◊ TI	135
	74180	National				32-Bit Parallel Error Detection and Correction Circuit			
	74180	Rochester			FAST	54F632	† National	140	
	N8262	Signetics			74F632	National			
	S8262	† Signetics			TTL-ALS				
	54180	† Signetics				SN74ALS632A	◊ TI	145	
	SN54180	† TI				SN74ALS632B	◊ TI		
	SN74180	TI							
TTL-ALS	SN74ALS280	◊ TI	50						
TTL-AS	DM74AS280	National							
	SN74AS280	◊ TI							
TTL-F	MC54F280	† Motorola		55					
	MC74F280	Motorola							
	54F280	◊*† National							
	74F280	◊* National							
	54F280	*† Signetics							
	74F280A	◊ Signetics							
	74F280B	◊ Signetics							
	SN54F280B	*† TI							
	SN74F280A	◊ TI							
			60						
			65						
TTL-LS									
	GD74LS280	GoldStar	70						
	HD74LS280	Hitachi							
	SN54LS280	† Motorola							
	SN74LS280	Motorola							

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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL—Special

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Processor (supply 5–12 V)	AM9511A	AMD		Counter, 8 Decade Frequency Counter/Latch/Display Driver (Direct 7 segment and digit drivers for common anode LEDs: 7216C, common cathode LEDs: 7216D. DC to 10 MHz, 5 V supply)	ICM7216D	Harris	40	Divider, Divide by 4, 0.1 to 1.5 GHz	S1534	Signetics	
Baud Rate Generator/Programmable Divider (ROM controlled divider)	COM8046	SMC		Counter, 8 Decade, BCD and 7 Segment Outputs, 5 MHz, Latches (supply 5–15 V)	LS7030	LSI Comp (3563)		Divider, Divide by 4, 0.15 to 1 GHz	SP8600A	† GEC Plessey	80
	COM8046T	SMC							SP8600B	GEC Plessey	
	COM8126	SMC	5	Counter, 24-Bit, Universal	LS7066	LSI Comp		Divider, Divide by 4/10/11/20/21	TD6109	Toshiba	
	COM8126T	SMC						Divider, Divide by 5/6, to 1 MHz	RED5/6	LSI Comp	
	COM8146	SMC		Counter, 32-Bit, Multiplexed and Latched Outputs (5 V supply)	LS7060	LSI Comp (3563)		Divider, Divide by 5/6, 0.2 to 1 GHz	SP8740A	† GEC Plessey	85
	COM8146T	SMC		Counter, 32-Bit, 8-Bit Prescalable, Multiplexed and Latched Outputs (5 V supply)	LS7061	LSI Comp (3563)			SP8740B	GEC Plessey	
Baud Rate Generator/Programmable Divider, Dual (ROM controlled divider)	COM5016T	SMC	10	Counter, 3 Timers, 0.01 to 99 sec Counter	RP5C06	Ricoh	45		MC12009	Motorola	
	COM8116	SMC		Cryptographic Data Security Element (12 Mbps data rate)	99C003	CE Infosys		Divider, Divide by 6/7, 0.2 to 1 GHz	SP8741A	† GEC Plessey	
	COM8116T	SMC		Data Acquisition System (250 kHz throughput)	DPHDAM16	Dense-Pac			SP8741B	GEC Plessey	
	COM8136	SMC			DPHDAM8	Dense-Pac		Divider, Divide by 8, 0.25 to 1 GHz	SP8735B	GEC Plessey	
	COM8136T	SMC		Data Encryption Device (high speed)	WD20C03A	Western		Divider, Divide by 8/9, 0.25 to 1 GHz	SP8743B	GEC Plessey	90
	WD1943	Western			WD2001	◊ Western			SP8743M	GEC Plessey	
Chassis-Level Phase Modulated DDS (with internal clock)	STEL9275	STEL (3705)		Data Encryption Device (NBS standard)	WD2002	◊ Western	50	Divider, Divide by 10, Above 1 GHz	SP8665B	GEC Plessey	
Comparator for Servomechanisms (NC, robot, and drawing machine applications)	KM3702D	Toko	15	Delay Generator (digitally programmable, TTL and ECL compatible)	AD9500B	AD (3347, 3352)			SP8668B	GEC Plessey	
Counter/Display Decoder, 4 Decade (7 segment and BCD outputs, 0.25 MHz; supply 5 V)	MIC5002	Micrel (3575)			AD9500T	† AD (3347, 3352)		Divider, Divide by 10, 0.2 to 1 GHz	SP8630A	† GEC Plessey	
	MIC5005	Micrel (3575)		Delay Line, 3-in–1	DS1013	◊ Dallas (3439)			SP8630B	GEC Plessey	
	MIC5007	Micrel (3575)		Delay Line, 10-Tap	DS1010	◊ Dallas (3439)	55	Divider, Divide by 10/11, 0.2 to 1 GHz	SP8643B	GEC Plessey	95
Counter/Display Driver, 6 Decade Up/Down (7 segment and BCD output, 1 MHz, presettable compare register, latched output, LED driver maximum count 999999, 995959, or 595999 versions, supply 10–15 V)	MIC50395	Micrel (3575)		Digital Delay Line (for filter, noise reduction)	CXK1202	Sony			SP8647A	† GEC Plessey	
	MIC50396	Micrel (3575)	20	Digital Filter, 64-Tap Complex Matched Filter	STEL3310	STEL (3703)			SP8647B	GEC Plessey	
	MIC50397	Micrel (3575)		Digital Gain Set, for setting gain of op-amps	LF13006	National			SP8680A	† GEC Plessey	
	MIC50398	Micrel (3575)			LF13007	National	25		SP8680B	GEC Plessey	100
	MIC50399	Micrel (3575)		Digital Neural Network Processor	N64000	Inova			SP8685A	† GEC Plessey	
Counter Logic Control (use with MC12013 and MC4016)	MC12014	Motorola		Digital Potentiometer, Dual	DS1267	Dallas			SP8685B	GEC Plessey	
Counter Time-Base (oscillator, programmable divider, 10 ¹ to 10 ⁸ , 2x10 ⁷ , 6x10 ⁶ , and 36x10 ⁶ , supply –12.5 V)	MIC5009	Micrel		Digital Resistor w/Op Amp	DS1667	Dallas			SP8690A	† GEC Plessey	
Counter/Timer, 4 Digit Up/Down Presettable Counter/Timer, Settable Register with Comparison to Counter, Multiplexed 7-Segment and BCD Output (maximum count 5959)	ICM7217B	Harris		Digital to Synchro Converter (16-bit)	DSC10510	ILC-DDC			SP8690B	GEC Plessey	
	ICM7217C	Harris		Digitally Controlled Transconductance Block	GT560	Gennum		Divider, Divide by 10/100/1000/10,000 to 2 MHz	MC12013	Motorola	105
	ICM7217B	◊ Maxim		Digitally Programmable Delay Generator	AD9501	AD (3347, 3352)	60	Divider, Divide by 16, 0.2 to 1 GHz	SP8659A	† GEC Plessey	
	ICM7217C	◊ Maxim		Divider, Divide by 2, Above 1 GHz	SP8606B	GEC Plessey			SP8659B	GEC Plessey	
Counter, Universal (8 decade)/Latch/Display Driver (direct 7 segment and digit drivers for common anode LEDs: 'A' types)	ICM7216A	Harris			SP8606M	GEC Plessey		Divider, Divide by 20, 0.2 to 1 GHz	SP8657A	† GEC Plessey	110
	ICM7216B	Harris		Digitally Controlled Transconductance Block	GT560	Gennum			SP8657B	GEC Plessey	
	ICM7226A	Harris		Digitally Programmable Delay Generator	AD9501	AD (3347, 3352)	65		SP8658	GEC Plessey	
	ICM7226B	Harris		Divider, Divide by 2, to 2 GHz, ECL Output	U822BS	AEG Corp			DS8628	National	
Counter, Dual (two 3-decade up/down counters with latch, BCD output, 0.5 MHz, supply 5–15 V)	LS7040	LSI Comp (3563)		Divider, Divide by 2, 0.2 to 1 GHz	SP8602A	† GEC Plessey	70	Divider, Divide by 20/21, to 225 MHz	DS8614	National	
Counter, Dual 16-Bit Binary Up Counter with 32-Bit Latch, Multiplexer and Three-State Drivers	LS7062	LSI Comp (3563)	35		SP8602B	GEC Plessey		Divider, Divide by 24, 0.2 GHz	DS8627	National	
Counter, Dual 16-Bit, Prescalable, Multiplexed and Latched Outputs (5 V supply)	LS7063	LSI Comp (3563)			SP8605B	GEC Plessey		Divider, Divide by 32, 0.2 to 1 GHz	SP8655A	† GEC Plessey	115
Counter, 6 Decade Up/Down (predetermining, 3 pre-set storage registers, latched output)	LS7055	LSI Comp (3563)			SP8605M	GEC Plessey			SP8655B	GEC Plessey	
Counter, 6 Decade, BCD Output, 5 MHz, 8 Latches (supply 5–15 V)	LS7031	LSI Comp (3563)		Divider, Divide by 2, 740 MHz	MC12090	Motorola	75	Divider, Divide by 32/33, to 225 MHz	DS8615	National	
				Divider, Divide by 3/4, 40 to 300 MHz	SP8720	GEC Plessey		Divider, Divide by 32/33, 225 MHz	MC12015	Motorola	
				Divider, Divide by 4, 0.07 to 1 GHz	SP8613	GEC Plessey		Divider, Divide by 40/41, to 225 MHz	DS8616	National	
								Divider, Divide by 40/41, 225 MHz	MC12016	Motorola	
								Divider, Divide by 50/60, to 1 MHz	RED50/60	LSI Comp	120
									SP8755A	† GEC Plessey	
									SP8755B	GEC Plessey	
								Divider, Divide by 64/65, to 225 MHz	DS8617	National	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

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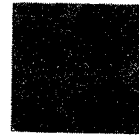
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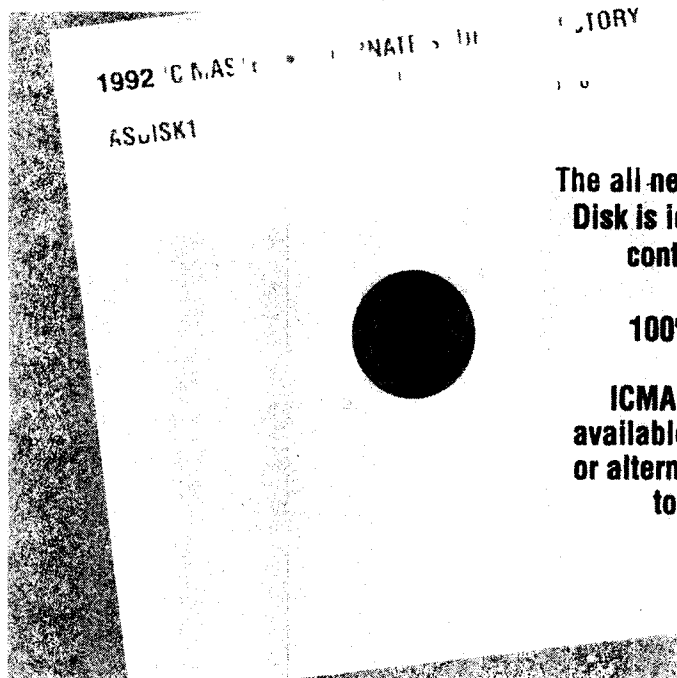
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INTRODUCTION TO DIGITAL SIGNAL PROCESSORS

This section begins with a Master Selection Guide that covers all major parameters needed to choose a digital signal processor for a particular application. Digital Signal Processors are broken down into two major categories: Fixed Point and Floating Point. Digital signal processors are sequenced by increasing external data bus width and then alphabetically by manufacturer.

Once you've chosen the proper digital signal processor for your application, go to the System Components section. Although some of these parts may be found in other Master Selection Guides, each of them is particularly suited to DSP applications. They are arranged alphabetically by function:

- Arithmetic Functions
- Converters, Analog to Digital
- Converters, Digital to Analog
- Processors
- Registers
- Miscellaneous

DIGITAL SIGNAL PROCESSORS—Fixed Point

Bus Width			Process Technology	No. of Pins	On-Chip Memory				Performance						Specifications		
Ext. Data (bits)	Int. Data (bits)	Address (bits)			RAM	ROM	EPROM	Cache	Clock Rate (MHz)	Load/Store Cycle (ns)	Cycles/ Instruction	Interrupt Latency (cycles)	Task Switch Time (ns)	Multiply Time (ns)	No. of Op Codes	Address Modes	Pipeline Depth
8	16	8	CMOS	68	256 x 16	2K x 24 instruction, 1K x 16 data			5.5296 MHz	181							
16	16	8	CMOS	28	2K				10	200	1	100	N/A	100	N/A	N/A	0
16	16	8	CMOS	32	256		2K		8	244	1	122		100			
16	16	12	CMOS		256 word	8K word				114							
16	16	12	CMOS	40	144 word	1.5K word				160							
16	16	12	CMOS	40	144 word	1.5K word				200							
16	16	12	CMOS	40	144 word	1.5K word				280							
16	16	12	CMOS	40	144 word	1.5K word			14.4 MHz	280							
16	16	12	CMOS	40	144 word	1.5K word			20.5 MHz	200							
16	16	12	CMOS	40	144 word	1.5K word			25.6 MHz	160							
16	16	12	CMOS	40	144 word	1.5K word			32.8 MHz	122							
16	16	12	CMOS	40	256 word		4K word			160							
16	16	12	CMOS	40	256 word		4K word			200							
16	16	12	CMOS	40	256 word		4K word			200							
16	16	12	CMOS	40	256 word	4K word				160							
16	16	12	CMOS	40	256 word	4K word				200							
16	16	12	CMOS	40	256 word	4K word				200							
16	16	12	CMOS	68	256 word		4K word			160							
16	16	12	CMOS	68	256 word	4K word				160							
16	16	12	NMOS	40	144 word	1.5K word				200							
16	16	12	NMOS	40	144 word	1.5K word				200							
16	16	14	CMOS	100				16 word	8.192		1						
16	16	14	CMOS	100				16 word	12.5 MHz	80	1						
16	16	16	CMOS	28	128 x 16	510 x 13 data, 1K x 23 program			8.33 MHz		1			240			
16	16	16	CMOS	28	128 x 16	512 x 13 data, 512 x 23 program				240	1						
16	16	16	CMOS	28	256 x 16		256 x 16 data, 2K x 24 program		8.192 MHz	122	1						
16	16	16	CMOS	28	256 x 16	256 x 16 data, 2K x 24 program			8.192 MHz	122	1						
16	16	16	CMOS	68	1.5K word	256 word				100							
16	16	16	CMOS	68	544 word		4K word			100							
16	16	16	CMOS	68	544 word	4K word				80							

Peripherals (No./Resolution)			Ports			Comments	Device	Source	Line
Timer/Counter	A/D Converter	D/A Converter	Parallel (bits)	Serial (No.)	Inter processor (No.)				
			3 x 8	1		Designed for modem applications. Consists of a dual processor and a modem function block. The dual processor comprises a uPD77C25 DSP and a uCOM78K/I general purpose processor.	μPD77810	NEC	5
			8	1			μPD77C25L-10	NEC	
			8	1			μPD77P25GW	NEC	
			8 x 16				TMS320C16	TI	
			8 x 16				TMS320C10-25	TI	
			8 x 16				TMS320C10	TI	10
			8 x 16				TMS320C10-14	TI	
			8 x 16				DSP320C10-14	Microchip	
			8 x 16				DSP320C10	Microchip	
			8 x 16				DSP320C10-25	Microchip	
			8 x 16				DSP320C10-32	Microchip	15
			8 x 16				TMS320E15-25	TI	
			8 x 16				TMS320E15	TI	
			6 x 16	2	1	On-chip μ-law/A-law companding hardware.	TMS320E17	TI	
			8 x 16				TMS320C15-25	TI	
			8 x 16				TMS320C15	TI	20
			6 x 16	2	1	On-chip μ-law/A-law companding hardware.	TMS320C17	TI	
4			7 x 16	1			TMS320E14	TI	
4			7 x 16	1			TMS320C14	TI	
			8 x 16				DSP32010	Microchip	
			8 x 16				TMS32010	TI	25
			16				ADSP2100	AD	
			16				ADSP2100A	AD (3349)	
			8	1			μPD77C20A	NEC	
			8	1			MSM77C20A	OKI (3606)	
			8 or 16	1		Twice the throughput of a uPD77C20A.	μPD77P25	NEC	30
			8 or 16	1		Twice the throughput of a uPD77C20A.	μPD77C25	NEC	
1			16 x 16	1			TMS320C26	TI	
1			16 x 16	1			TMS320E25	TI	
1			16 x 16	1			TMS320C25-50	TI	

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DIGITAL SIGNAL PROCESSORS—Fixed Point (Cont'd)

Bus Width			Process Technology	No. of Pins	On-Chip Memory				Performance					Specifications			
Ext. Data (bits)	Int. Data (bits)	Address (bits)			RAM	ROM	EPROM	Cache	Clock Rate (MHz)	Load/Store Cycle (ns)	Cycles/ Instruction	Interrupt Latency (cycles)	Task Switch Time (ns)	Multiply Time (ns)	No. of Op Codes	Address Modes	Pipeline Depth
16	16	16	CMOS	68	544 word	4K word				100							
16	16	16	CMOS	68	544 word	4K word				100							
16	16	16	CMOS	68	544 word	4K word				120							
16	16	16	CMOS	84	2K word	4K word		15 word		25	1						
16	16	16	CMOS	84	2K word	4K word		15 word		33	1						
16	16	16	CMOS	84	2K word	4K word		15 word		55	1						
16	16	16	CMOS	84	512 word	2K word		15 word		55	1						
16	16	16	CMOS	84	512 word	2K word		15 word		75	1						
16	16	16	CMOS	132	1K word (data + program)	8K word				35							
16	16	16	CMOS	132	1K word (data + program)	8K word				50							
16	16	16	CMOS	132	9K word (data + program)	2K word				35-50							
16	16	16	HCMOS	101	2K words	Opt. 12K			40	50	1				22		
16	16	16	NMOS	28	128 x 16		510 x 13 data, 1K x 23 program		8.33 MHz		1			240			
16	16	16	NMOS	28	128 x 16	510 x 13 data, 1K x 23 program			8.33 MHz		1			240			
16	16	16	NMOS	68	544 word					200							
16	16	16	NMOS	68	544 word					200							
24	16	14	CMOS	68	1K x 16	2K x 24				80							
24	16	14	CMOS	68	2K x 24 program, 1K x 16 data					80							
24	24	16	HCMOS	88		3.75K words + X/Y DATA ROMS			20.5 MHz		1				18	3	
24	24	16	HCMOS	88	512 words	32 word bootstrap			20.5 MHz		1				18	3	
24	24	16	HCMOS	88	512 words	32 word bootstrap			27 MHz		1				18	3	
24	24	16	HCMOS	88	512 words	32 word bootstrap			33 MHz		1				18	3	
32	24	12	CMOS	68	512		2K		20	200	1	100		100		3	
32	24	12	CMOS	68	512	2K			20	200	1	100		100		3	

Peripherals (No./Resolution)			Ports			Comments	Device	Source	Line
			Parallel (bits)	Serial (No.)	Inter processor (No.)				
Timer/Counter	A/D Converter	D/A Converter							
1			16 x 16	1			SMJ320C25	TI	5
1			16 x 16	1			TMS320C25	TI	
1			16 x 16	1			TMS320C25-33	TI	
			16	1		Three internal processing units, two for memory addressing and one for data operations. RAM/ROM expandable off-chip to 60/64K.	WE-DSP16A-025	AT&T	
			16	1		Three internal processing units, two for memory addressing and one for data operations. RAM/ROM expandable off-chip to 60/64K.	WE-DSP16A-033	AT&T	
			16	1		Three internal processing units, two for memory addressing and one for data operations. RAM/ROM expandable off-chip to 60/64K.	WE-DSP16A-055	AT&T	10
			16	1		Three internal processing units, two for memory addressing and one for data operations. RAM/ROM expandable off-chip to 64K.	WE-DSP16-055	AT&T	
			16	1		Three internal processing units, two for memory addressing and one for data operations. RAM/ROM expandable off-chip to 64K.	WE-DSP16-075	AT&T	
1			64K	2			TMS320C51-57	TI	
1			64K	2			TMS320C51	TI	
1			64K	2			TMS320C50	TI	15
1			16	2		CPU consists of three execution units in parallel: Data Arithmetic Logic Unit, Address Generation Unit, and Program Generation Unit.	XC56116-40	Motorola	
			8	1			μPD77P20	NEC	
			8	1			μPD7720A	NEC	
1			16 x 16	1		Twice the throughput of a 32010.	SMJ32020	TI	
1			16 x 16	1		Twice the throughput of a 32010.	TMS32020	TI	20
1			24	2		Three independent computational units: ALU, Multiplier/Accumulator, and Barrel Shifter.	ADSP2102	AD (3349)	
1			24	2		Three independent computational units: ALU, Multiplier/Accumulator, and Barrel Shifter.	ADSP2101	AD (3349)	
1			24	1		The core of the processor consists of three units operating in parallel, the data ALU, the address generation unit, and the program controller.	DSP56000-20	Motorola	
1			24	1		The core of the processor consists of three units operating in parallel, the data ALU, the address generation unit, and the program controller. Mu- and A-Law to linear expansion table and four quadrant sine wave table.	XSP56001-20	Motorola	
1			24	1		The core of the processor consists of three units operating in parallel, the data ALU, the address generation unit, and the program controller. Mu- and A-Law to linear expansion table and four quadrant sine wave table.	XSP56001-27	Motorola	
1			24	1		The core of the processor consists of three units operating in parallel, the data ALU, the address generation unit, and the program controller. Mu- and A-Law to linear expansion table and four quadrant sine wave table.	XSP56001-33	Motorola	
			16	1			μPD77P220L	NEC	
			16	1			μPD77220L	NEC	

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DIGITAL SIGNAL PROCESSORS—Floating Point

Bus Width			Process Technology	No. of Pins	On-Chip Memory				Performance						Specifications		
Ext. Data (bits)	Int. Data (bits)	Address (bits)							Clock Rate (MHz)	Load/Store Cycle (ns)	Cycles/Instruction	Interrupt Latency (cycles)	Task Switch Time (ns)	Multiply Time (ns)	No. of Op Codes	Address Modes	Pipeline Depth
					RAM	ROM	EPROM	Cache									
22	22	16	CMOS	84	512 x 22	2K x 32				100							
22	22	16	CMOS	84	512 x 22	2K x 32				100							
22	22	16	CMOS	132	1K x 32	1K x 32				100							
32	32		HCMOS	223	1K X/Y, 1K Program memory	2 Data ROMs			33 MHz								
32	32		HCMOS	223	1K X/Y, 1K Program memory	2 Data ROMs			40 MHz								
32	32	14	CMOS	100	512 words x 2	512 words			16	250	1						
32	32	14	CMOS	100	512 words x 2	512 words			25	160	1						
32	32	22	CMOS	13 x 13 PGA	1K word	2K words				80	1						
32	32	22	CMOS	13 x 13 PGA	1K word	2K words				100	1						
32	32	24	CMOS	132	1K	2K			11	180	1	90		90			3
32	32	31	CMOS		8K x 32	16K x 32		512 Bytes		40	1						
32	32	32	CMOS		2K word					60	1						
32	32	32	CMOS		2K word					74	1						
32	32	32	CMOS		2K word	4K word				60	1						
32	32	32	CMOS		2K word	4K word				74	1						
32	32	32	CMOS	68	1K x 32		2K x 32 instruction, 1K data		13.3 MHz	150	1			150	26		3
32	32	32	CMOS	68	1K x 32	2K x 32 instruction, 1K data			13.3 MHz	150	1			150	26		3
32	32	32	CMOS	68	1K x 32	2K x 32 instruction, 1K data			13.3 MHz	150	1			150	26		3

Peripherals (No./Resolution)			Ports			Comments	Device	Source	Line
Timer/Counter	A/D Converter	D/A Converter	Parallel (bits)	Serial (No.)	Inter processor (No.)				
			21		1	The MSM699210 has the processor mode and controller mode as external interface. The interface functions allow establishing a multiprocessor system or highly flexible system configuration.	MSM699210	OKI	5
			21	1	1	The MSM699215 has the same architecture as the MSM699210 but has serial ports.	MSM699215	OKI	
			21			Capable of functioning in the master mode as a multiprocessor or in the slave mode as a microcomputer I/O processor.	MSM6992	OKI (3606)	
			32		2 Host/ Slave	CPU consists of three 32-bit execution units operating in parallel: the Data Arithmetic Unit, the Address Generation Unit, and the Program Control Unit. Linear arrays of processors can be implemented without glue logic.	XC96002-33	Motorola	5
			32		2 Host/ Slave	CPU consists of three 32-bit execution units operating in parallel: the Data Arithmetic Unit, the Address Generation Unit, and the Program Control Unit. Linear arrays of processors can be implemented without glue logic.	XC96002-40	Motorola	
			32	1		Two internal arithmetic units available to the designer, the control arithmetic unit (CAU) and the data arithmetic unit.	WE-DSP32-250	AT&T	
			32	1		Two internal arithmetic units available to the designer, the control arithmetic unit (CAU) and the data arithmetic unit.	WE-DSP32-160	AT&T	10
			32	1		Two internal arithmetic units available to the designer, the control arithmetic unit (CAU) and the data arithmetic unit. Opt 0/1.5K ROM/RAM.	WE-DSP32C-080	AT&T	
			32	1		Two internal arithmetic units available to the designer, the control arithmetic unit (CAU) and the data arithmetic unit. Opt 0/1.5K ROM/RAM.	WE-DSP-32C-100	AT&T	
							μPD77240R	NEC	15
2			32		6 x 32	Interprocessor communication handled by DMA and/or COM ports. Global and local bus bandwidths support data and program fetches. All six high-speed COM ports (interprocessor) capable of bidirectional data rates of 160 Mbits per second.	TMS320C40	TI	
1			16M x 32	1		External/internal DMA.	TMS320C31	TI	
1			16M x 32	1		External/internal DMA.	TMS320C31-27	TI	15
2			16M x 32	2		External/internal DMA.	TMS320C30	TI	
2			16M x 32	2		External/internal DMA.	TMS320C30-27	TI	
			32	1		Master/slave mode operation.	μPD77P230	NEC	
			32	1		Master/slave mode operation.	μPD77230A	NEC	
			32	1		Master/slave mode operation. The mask ROM contains a standard, general-purpose DSP library.	μPD77230A-003	NEC	

Bold face indicates additional data is provided on the page noted.

DIGITAL SIGNAL PROCESSORS—System Components

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Arithmetic Functions				Multiplier (12x12)				Shift Matrix, 8-Bit Barrel Shifter			
Accumulator, Complex	PDSP16318	GEC Plessey		ADSP1012A	AD			100158	Micro-C		100
Add/Subtract Logic, 16-Bit	L4C381C	◊* LogicDev		MPV12	IMI			F100158	◊ National		
	L4C381M	◊† LogicDev		MPY12	† IMI			100158	Signetics		
Adder, 6-Bit High Speed	F100180	◊ National		LMU12	◊† LogicDev			Shifter, Barrel Shifter			
	100180	Signetics	5	Multiplier (12x12) 2's Complement and Unsigned				AM25S10	† AMD		
Adder, 9-Bit Wallace Tree	F100182	◊ National		MaGNITUDE	LMU112	◊† LogicDev	50	LSH32C	◊* LogicDev		
Address Generator	ADSP1410	* AD		Multiplier (16x16)				LSH32M	◊† LogicDev		105
ALU, Cascadable	MA7188	GEC Plessey		ADSP1016A	AD			MC54F350	† Motorola		
	IDT7381	IDT		CY7C516C	◊ Cypress			MC74F350	Motorola		
	IDT7383	IDT	10	CY7C516M	◊† Cypress			54F350	† National		
	IDT7384	IDT		CY7C517C	◊* Cypress			74F350	◊* National		110
ALU, Floating Point	ADSP3220	* AD		CY7C517M	◊† Cypress		55	N25S10	Signetics		
	ADSP3222	AD		PDSP16116A	GEC Plessey			54S350	† Signetics		
	TDC1022	TRWLSI		HMU16	Harris			74F350	† Signetics		
ALU w/Barrel Shifter	PDSP1601	GEC Plessey	15	HMU16/883	† Harris			SN74F350	* TI		
ALU, Single Precision	ADSP3202	AD		HMU17	Harris			Converters, Analog to Digital			
ALU, 4-Bit Binary, BCD	F100181	National		HMU17/883	† Harris		60	4-Bit, 200 MSPS			
ALU, 4-Bit, BCD	100181	Signetics		IDT7317	IDT			TDC1034	TRWLSI		
ALU, 16 Bit-Slice	L29C101	◊† LogicDev		LMU16	◊† LogicDev			4-Bit, 30 MSPS			
Convolver, 2D	HSP48908	Harris	20	LMU17	◊† LogicDev			UAB1005	SGS-Thomson		115
Convolver, 2D w/Integral Delay Lines	PDSP16488	GEC Plessey		LMU18	◊† LogicDev			6-Bit, 100 MSPS			
Correlator	MA7170	GEC Plessey		LMU216M	◊† LogicDev			SDA5200	Siemens		
	HSP45256	Harris	(3518)	LMU217	◊† LogicDev			TDC1029	† TRWLSI		
	L10C23	◊† LogicDev		Multiplier (24x24)				6-Bit, 15 MSPS	CA3306	Harris	
	L10C23M	◊† LogicDev	25	ADSP1024A	AD			6-Bit, 25 MSPS			
	L1023C	◊† LogicDev		ADSP1024AS	† AD			TDC1014	† TRWLSI		120
	TMC2220	TRWLSI		ADSP1024AT	† AD			TDC1046	† TRWLSI		
	TMC2220-1	† TRWLSI		Multiplier (32-bit)				6-Bit, 50 MSPS			
Digital Array Signal Processor	HDSP66110	Signal Proc		ADSP3210	* AD		70	SDA6020	Siemens		
FFT Processor	PDSP16510	GEC Plessey	30	Multiplier-Accumulator, Complex Numbers				7-Bit, 15 MSPS			
	L64280	LSI Logic		STI2003	STEL			TDC1147	TRWLSI		
Floating Point Accelerator (FPA)	LR3010	◊† LSI Logic		Multiplier-Accumulator, Serial				7-Bit, 20 MSPS			
Multiplier, Complex (16x12)	PDSP16112	GEC Plessey		DSP135	STC			TDC1047	TRWLSI		
Multiplier, Complex (16x16)	PDSP16116	GEC Plessey		Multiplier-Accumulator (8x8)				7-Bit, 50 ns	MC10319	Motorola	
Multiplier, Floating Point, Single Precision	ADSP3201	AD	35	ADSP1008	* AD			8-Bit, 100 MSPS			
Multiplier, Programmable	DSP135	STC		ADSP1008A	AD			SDA8010	Siemens		125
Multiplier (2x8) Recode	F100183	◊ National		Multiplier-Accumulator (12x12)				8-Bit, 170 MSPS			
Multiplier (8-Bit Serial)	54HCT384	† Signetics		ADSP1009A	AD			SCA5008	STC		
Multiplier (8x8)	AM25S58	* AMD		LMA1009	◊† LogicDev			TDC1048	◊† TRWLSI		
	ADSP1080A	AD		LMA2009	◊† LogicDev			THC1068	TRWLSI		
	ADSP1081A	AD	40	TDC1009	† TRWLSI			8-Bit, 50 MSPS			
	LMU08	◊† LogicDev		TMC2009	† TRWLSI			TDC1025	TRWLSI		
	LMU557	◊† LogicDev		Multiplier-Accumulator (16x16)				12-Bit, 1.5 μs	ADC803	Burr-Brown	130
	LMU558	◊† LogicDev		ADSP1010A	AD			12-Bit, 100 ns	ADC600	Burr-Brown	
	LMU8U	◊† LogicDev	45	ASDP1010	† AD			12-Bit, 20 MSPS			
				MA7010	GEC Plessey			SCA3012	STC		
				HMA510	Harris			12-Bit, 3000 ns			
				HMA510/883	† Harris			MX578	† Maxim		
				LMA1010	◊† LogicDev			13-Bit ADC	TC5092A	Toshiba (3727)	
				LMA2010	◊† LogicDev			14-Bit A/D D/A for TMS320 DSP			
				TMC2210	† TRWLSI			TLC32040	† TI		135
				WS59510	Waferscale (3753)			16-Bit, Sigma Delta			
				Multiplier-Accumulator (16x16), single port				XC56ADC16S	Motorola		
				NCR45CM16A	† Harris			18-Bit, 200 kHz, Serial Output, Dual			
				NCR45CM16	† NCR			DSP102	Burr-Brown (3421)		
				Multiplier-Divider, Floating Point				18-Bit, 200kHz, Serial Output			
				ADSP3212	* AD			DSP101	Burr-Brown (3421)		
				Polar to Cartesian Converter				Converters, Digital to Analog			
				PDSP16340	GEC Plessey		95	4-Bit Triple Video DAC, 200 MSPS			
				Processing Register				TDC1334	TRWLSI		
				DSP134	STC			4-Bit, 4 ns	HDG0405	AD	140
				Programmable Array Controller				ZN434	GEC Plessey		
				HDSP66210	Signal Proc			TDC1034	TRWLSI		
				Programmable FIR Filter (16 multiplier - accumulators)							
				PDSP16256	GEC Plessey						
				Pythagoras Processor							
				PDSP16330	GEC Plessey						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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DIGITAL SIGNAL PROCESSORS—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Converters, Digital to Analog (Cont'd)				Controller, 32-Bit, Floating Point	MB86910	Fujitsu	35	Processor, DSP, 16-Bit Fixed Point	(Cont'd)		
6-Bit, Triple Video DAC, 35 MSPS	IMSG170-35	SGS-Thomson		Discrete Cosine Transform Processor (30 MHz)	L64730-30	LSI Logic (3571)		WE-DSP16A	AT&T		
6-Bit, Triple Video DAC, 50 MSPS	IMSG170-50	SGS-Thomson		Discrete Cosine Transform Processor (40 MHz)	L64730-40	LSI Logic (3571)		DSP320C10	Microchip		85
6-Bit, 6 ns	HDG0605	AD		Discrete Cosine Transform Quantization Processor (MHz)	L64740-30	LSI Logic (3571)		DSP320C10-14	Microchip		
8-Bit Video DAC (300 MHz)	VC108K	VTC		Discrete Cosine Transform Quantization Processor (40 MHz)	L64740-40	LSI Logic (3571)		DSP320C10-25	Microchip		
8-Bit, Triple Video DAC	AH8308T	Analogic		FFT Processor Chipset (40 MHz)	L64281-40	LSI Logic (3570)	40	DSP320C10-32	Microchip		
8-Bit, Triple Video DAC, 200 MSPS	SCD6038	STC		Histogram/Hough Transform Processor (HHP)	L64250	LSI Logic		μ PD77C20A	NEC		
8-Bit, Triple Video DAC, 200 MSPS	TDC1318	TRWLSI		Modem DSP contains μ PD77C25 DSP, uCOM78 general purpose processor, and modem block	μ PD77810	NEC		μ PD77C25	NEC		
8-Bit, 100 MSPS	AD9768	AD	(3312)	Multiplier and ALU, 22-Bits, Floating Point	TDC1042	TRWLSI		μ PD7720A	NEC		
8-Bit, 125 MSPS	AD9700	AD		Multiplier/Divider Set, 32 and 64-Bit IEEE Floating Point	ADSP3212	AD		MSM77C20A	OKI	(3606)	90
8-Bit, 165 MSPS	HDAC10181B	Signal Proc		Multiplier/Divider and ALU	ADSP3222	AD		SMJ320C25	* \uparrow TI		
8-Bit, 20 MSPS	TDC1016	TRWLSI		Multiplier Set, 32 and 64-Bit IEEE Floating Point	ADSP3210	AD		SMJ32020	\uparrow TI		
8-Bit, 200 MSPS	HDAC97000	\uparrow Signal Proc		Multiplier and ALU	ADSP3211	AD		TMS320C10	TI		
8-Bit, 200 MSPS	HDAC10181A	\uparrow TRWLSI		Multiplier Set, 32 and 64-Bit IEEE Floating Point	ADSP3220	AD		TMS320C10-14	TI		
8-Bit, 275 MSPS	HDAC10180A	Signal Proc		Multiplier Set, 32 and 64-Bit IEEE Floating Point	ADSP3221	AD		TMS320C10-25	TI		95
8-Bit, 275 MSPS	HDAC10181A	Signal Proc		Multiplier Set, 32 and 64-Bit IEEE Floating Point	ADSP3221	AD		TMS320C15	TI		
8-Bit, 5 MSPS, 8 dB Dynamic Range	TLC7524	TI		Multiplier Set, 32-Bit IEEE Floating Point Multiplier and ALU	ADSP3221	AD		TMS320C15-25	* \circ TI		
8-Bit, 8 ns	HDG0805	AD		Multiplier Set, 32-Bit IEEE Floating Point Multiplier and ALU	IDT721264	IDT		TMS320C17	TI		
9-Bit, 20 MSPS	TDC1016	\uparrow TRWLSI		Processor, ADPCM	DS2167	\circ Dallas		TMS320C25	TI		100
10-Bit, 15 ns	HDD1015	\uparrow AD		Processor, ADPCM	DS2168	\circ Dallas		TMS320C25-33	* \circ TI		
10-Bit, 20 MSPS	TDC1016	TRWLSI		Processor, ADPCM	TEL721	STC		TMS320C25-50	TI		
10-Bit, 75 MSPS	SP9770	GEC Plessey		Processor, Advanced Signal Processor (ASP)	μ PD77C20	NEC		TMS32020	TI		
12-Bit DAC (125 ns settling time)	VC512J	VTC		Processor, Concurrent	Transputer	SGS-Thomson		Processor, DSP, 16-Bit Fixed Point w/EPROM	μ PD77P20	NEC	
12-Bit, 20 MSPS	TDC1012	TRWLSI		Processor, Digital Signal Processor	WE-DSP32C	AT&T		μ PD77P25	NEC		
12-Bit, 40 ns	DAC63	Burr-Brown		Processor, DSP	ADSP2100J	\circ AD (3349)		SMJ320E15	* \uparrow TI		105
12-Bits (0.012 linearity error)	DAC65	Burr-Brown	(3417)	Processor, DSP	ADSP2100K	\circ AD (3349)		TMS320E15	TI		
16-Bits (serial latched)	PCM60	Burr-Brown	(3419)	Processor, DSP	ADSP2100S	* \uparrow AD (3349)		TMS320E15-25	* \circ TI		
18-Bit, 200 kHz, Serial Input	DSP201	Burr-Brown	(3417, 3422)	Processor, DSP	MB87064	Fujitsu		TMS320E17	TI		
18-Bit, 200 kHz, Serial Input, Dual	DSP202	Burr-Brown	(3417, 3422)	Processor, DSP	MB8764	Fujitsu		TMS320E25	\circ TI		
Processors				Processor, DSP	DSP56000	\uparrow Motorola		Processor, DSP, 16-Bit (40 MHz), 1.5K RAM Version of TMS320C25	TMS320C26	\circ TI	110
BCH Error Correcting Codec (30 MHz)	L64715-30	\circ LSI Logic (3571)		Processor, DSP	F9450	\circ National		Processor, DSP, 22-Bit Floating Point	MSM699210	OKI	
Controller for UT69532 IQMAC DSP Device	UT69321	\circ \uparrow UTMIC		Processor, DSP	MN1900	SGS-Thomson		MSM699215	OKI		
Controller, Microprogram	WS5910A	Waferscale	(3753)	Processor, DSP	TS68930	SGS-Thomson		Processor, DSP, 24-Bit Fixed Point	μ PD77220	\circ NEC	
Controller, Microprogram	WS5910B	Waferscale	(3753)	Processor, DSP	TS68931	SGS-Thomson		Processor, DSP, 24-Bit Floating Point	MB86220	Fujitsu	
				Processor, DSP	TMS32010	\circ \uparrow TI		MB86232	Fujitsu		
				Processor, DSP	TMS320	TI		MSM6992	OKI	(3606)	115
				Processor, DSP, Floating Point	8232	Intel		Processor, DSP, 32-Bit Floating Point	WE-DSP32	AT&T	
				Processor, DSP, High Performance External ROM	Version of TS68930			μ PD77230	NEC		
				Processor, DSP, 16/32-Bit Fixed Point	TMS320C14	TI		Processor, DSP, 32-Bit Floating Point w/EPROM	μ PD77P230	NEC	
				Processor, DSP, 16/32-Bit Fixed Point w/EPROM	TMS320C50	\circ TI		Processor, DSP, 32-Bit Floating Point (26 MHz)	TMS320C30-26	* \circ TI	120
				Processor, DSP, 16-Bit Fixed Point	TMS320C51	TI		TMS320C31	TI		
				Processor, DSP, 16-Bit Fixed Point	ADSP2100	\circ AD		TMS320C31-26	TI		
				Processor, DSP, 16-Bit Fixed Point	ADSP2100A	\circ AD (3349)		Processor, DSP, 32-Bit Floating Point, 33 MFLOPS	TMS320C30	\circ \circ TI	
				Processor, DSP, 16-Bit Fixed Point	ADSP2101	AD (3349)		Processor, DSP, 32-Bit, With Modem	TMS320A2400	TI	
				Processor, DSP, 16-Bit Fixed Point	ADSP2102	AD (3349)		Processor, DSP (40 MHz) (1K RAM-program, 512 RAM data)	ADSP2105	AD (3337)	125
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, DSP (52 MHz)	ADSP21MSP50	AD	
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		ADSP2111	AD (3349)		
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, DSP, 56-Bit	DSP56001	Motorola	
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, DSP (1Kx24-bit program memory)	ADSP2106	AD (3349)	
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, DSP (8 kHz sampling freq.)	ADSP28MSP02	AD	
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, Geometric Arithmetic Pattern Processor	NCR45CG72	NCR	
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T		Processor, Image Pipeline (Data Flow)	μ PD7281	NEC	130
				Processor, DSP, 16-Bit Fixed Point	WE-DSP16	AT&T					

\uparrow Mil Temp Range (-55° to 125°C) \uparrow High Rad Resistance *Typical Value *Behavioral Model Available \circ Available in Surface Mount Package
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DIGITAL SIGNAL PROCESSORS—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Processors (Cont'd)				Pipeline Register, Multilevel (Cont'd)				Filter, Cascadable Adaptive Finite Impulse Response (CAFIR)			
Processor, Signal Processing Interface				WS59520	Waferscale	(3753)	45	DSP56200	Motorola		
S77C20	Gould AMI	(3498)		WS59521	Waferscale	(3753)		Filter, Decimating Digital	HSP43220	Harris	(3516) 80
S7720	Gould AMI	(3498)		Processing Register	DSP134	STC		Filter, FIR	PDSP16256	GEC Plessey	
MSM77C20	OKI			Register File	ADSP3128A	AD		NCR45CF8	NCR		
Processor, Vector, Floating Point, Single Precision (60–80 MFLOPS; 1K point complex FFT)	UT69532	† UPMC		Register File, 3-Port (8x8)	LRF07C	◊† LogicDev		TDC1028	† TRWLSI	TRWLSI	
Program Sequencer	ADSP1401	◊ AD	5	Register File, 5-Port (8x8)	LRF08	◊† LogicDev	50	TMC2243			
ADSP1402	AD			Shift Register, 8-Bitx3, 18 Bits Long, Programmable	TDC1011	◊† TRWLSI		Filter, FIR, Cascadable Adaptive, 10.5 MHz	MC56200LC10	Motorola	85
Signal Processor, Analog Real Time	2920	Intel		Miscellaneous				Filter, FIR, Dual	HSP43168	Harris	(3515)
2921	Intel			Address Generator	PDSP1640	GEC Plessey		HSP43481	Harris		
Video Motion Estimator Processor (30 MHz)	L64720-30	LSI Logic	(3571)	Address Sequencer	HSP45240	Harris		Filter, FIR, 12-Bit	LMS12C	◊† LogicDev	
Video Motion Estimator Processor (40 MHz)	L64720-40	LSI Logic	(3571)	Array, Custom	QuickChip 2	Tektronix		Filter, FIR, (30 MHz)	HSP43881	Harris	
Video Object Contour Tracer	L64290-20	LSI Logic	(3570)	QuickChip 2S	Tektronix			HSP43891	Harris		90
4-Bit Slice	AM29203	† AMD		Buffer, Bucket, 32K	PDSP16540	GEC Plessey		Filter, FIR (40 MHz)	L64260-40	LSI Logic	(3570)
2901	Harris			Buffer, Programmable	HSP9501	Harris		L64261-40	LSI Logic	(3570)	
2901	LSI Logic			Codec, Reed-Solomon Error-Correcting	L64710-40	LSI Logic	(3570)	Filter, Multi-Bit (15 MHz)	L64240-15	LSI Logic	(3570)
2901-Cell	LSI Logic			Coder/Decoder/Filter, 14-Bit, 14 dB Dynamic Range, 19.2 MSPS (Programmable)	TLC32040	TI		Filter, Multi-Bit (20 MHz)	L64240-20	LSI Logic	
IDM2901	† National		15	TLC32041	TI			Filter, Multi-Bit, (20 MHz), (3x3)	L64243-20	LSI Logic	(3570) 95
NCR2910-Cell	NCR			TLC32042	TI			Filter, Multi-Bit, (30 MHz), (3x3)	L64243-30	LSI Logic	(3570)
SFC2901	SGS-Thomson			Comparator, String Proximity Computer and Ranker	PF474C	Proximity		Filter, Multi-Bit, (40 MHz), (3x3)	L64243-40	LSI Logic	(3570)
SFC2903	SGS-Thomson			Converter, Digital to Resolver	DRC10520	† ILC-DDC		Filter, Rank Order	MA7190	GEC Plessey	
2901	SGS-Thomson		20	Converter, Digital to Synchro/Resolver	DSC11520	† ILC-DDC		Filter, Rank-Valve (15 MHz)	L64220-15	LSI Logic	(3570)
2901-Cell	SGS-Thomson			Converter, Resolver to Digital, 10/12/14/16-Bits	2S80	AD		Filter, Rank-Valve (20 MHz)	L64220-20	LSI Logic	(3570) 100
2901	Waferscale			Converter, Resolver to Digital, 12-Bit	2S81	AD		Filter, Binary and Template Matcher (15 MHz)	L64230-15	LSI Logic	(3570)
4-Bit Slice (43 MHz)	WS5901C	Waferscale		Convolver 1-D/2-D	MA7180	GEC Plessey		Filter, Binary and Template Matcher (20 MHz)	L64230-20	LSI Logic	(3570)
WS5901D	Waferscale	(3753)		Crossbar Switch (64x64)	L64270	LSI Logic		Filter, 16-Bit Digital	MB86975	Fujitsu	
8-Bit Slice	5908	Harris	25	Data Acquisition Peripheral (w/12-bit plus sign A/D converter)	ML2208BC	MicroLinear		Filter, 16-Bit, 32 Stage, Cascadable Transversal	IMSA100	SGS-Thomson	
16-Bit General Purpose (20 MIPS)	DSP56116	◊ Motorola		Delay Line (programmable length)	ISP9500	Harris		FIR Filter Processor (computes inner products on 16-bit data, 30 MHz)	L64260-30	LSI Logic	(3570) 105
DSP56156	◊ Motorola			Digital Decimation Filter (user selectable for 1/4 or 1/2 decimating ratios)	DF1750	Burr-Brown		L64261-30	LSI Logic	(3570)	
16-Bit Slice	5916	Harris		Digital Filter, 8x Oversampling, Dual Channel	DF1700	Burr-Brown		Histogram/Hough Transform Processor, 15 MHz	L64250-15	LSI Logic	(3570)
16-Bit Slice (15 MHz)	WS59016C	◊ Waferscale		Digital timing delay, 15 ps delay resolution, 125 MHz trigger rate	Bt604	Brooktree	(3404, 3406)	Histogram/Hough Transform Processor, 20 MHz	L64250-20	LSI Logic	(3570)
(3753)				Digitally Programmable Delay Generator (10 ps resolution)	AD9500	AD	(3352)	I/Q Splitter w/Numerically Controlled Oscillator	PDSP16350	GEC Plessey	
16-Bit Slice (32 MHz)	WS59016D	◊ Waferscale		DSP PROM-Waveform Map 4 Bit Cosine	DRFS-3254	◊† Proxim Inc.		Image Sampling Sequencer (processes 4Kx4K multibit words at up to 18 MHz)	TMC2301	TRWLSI	110
(3753)				DSP PROM-Waveform Map 8 Bit Cosine	DRFS-3252	◊† Proxim Inc.		Numerically Controlled Modulated Oscillator, Waveform Map	DRFS2252	Proxim Inc.	
16-Bit Versions of 2901	4x2901B	IMI		Encoder/Decoder, ADPCM	μPD77C30C	◊ NEC		DRFS2253	Proxim Inc.		
WS59016	† Waferscale			Ethernet/StarLAN Controller, IEEE 802.3	MB86950	Fujitsu		DRFS2254	Proxim Inc.		
32-Bit Slice (1.35 MHz)	WS59032D	◊ Waferscale		Registers				Numerically Controlled Modulated Oscillator, 35 MHz	DRFS3250-35	◊ Proxim Inc.	
(3753)				Pipeline Register, Multilevel	HSP9520	Harris	35	Numerically Controlled Modulated Oscillator, 40 MHz	DRFS3250-40	◊ Proxim Inc.	115
32-Bit Slice (20 MHz)	WS59032E	◊ Waferscale		HSP9521	Harris			Numerically Controlled Oscillator/Modulator	HSP45116	Harris	(3517)
(3753)				ISP9520	Harris						
				ISP9521	Harris						
				IDT7320	IDT						
				IDT7321	IDT						
				LPR520	◊† LogicDev						
				LPR521	◊† LogicDev						
				L29C520	◊† LogicDev						
				L29C521	◊† LogicDev						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

DIGITAL SIGNAL PROCESSORS—System Components (Cont'd)

Function	Device	Source	Line
Miscellaneous (Cont'd)			
Numerically Controlled Oscillator, 32-Bit Resolution, 33 MHz			
	HSP45102-33	Harris (3513)	
	HSP45102-40	Harris (3513)	
	HSP45102-50	Harris (3513)	
	HSP45106	Harris (3514)	
PCM Encoder/Decoder			
	TCM129C18	TI	5
	TCM129C19	TI	
	TCM29C18	TI	
	TCM29C19	TI	
Programmable timing delay, 15 ps delay resolution, 125 MHz trigger rate, 4–40 ns delay			
	BT605	Brooktree (3404, 3406)	
RAM, Quad-Port, Synchronous			
	PDSP16520	GEC Plessey	10
Speech Record/Playback, ADPCM			
	μPD77501GC	◊ NEC	
Video Edge Detector			
	PDSP16401	GEC Plessey	
Video Image Filter			
	HSP48901	Harris	
Video Image Processor Memory Access and General Bus Interface for the uPD7281			
	μPD9305	NEC	
Video Image Processor, Pipelined			
	μPD7281	NEC	15
Video Line Buffer, Multi-Function			
	7186	GEC Plessey	
Video Shift Register			
	L64211-15	LSI Logic (3570)	
Video Shift Register (15 MHz)			
	L64210-15	LSI Logic (3570)	
Video Shift Register (20 MHz)			
	L64210-20	LSI Logic (3570)	20
	L64211-20	LSI Logic (3570)	
Voice-Band Analog Interface			
	TLC32044	TI	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTRODUCTION TO MICROPROCESSORS

This section begins with a Master Selection Guide that covers all major parameters needed to choose a microprocessor for a particular application. The Microprocessors sections will be broken down into three main categories: Complex Instruction Set Computers (CISC), Reduced Instruction Set Computers (RISC), and finally Microcontrollers. Microprocessors are sequenced by increasing data word size and then alphabetically by manufacturer.

Once you've chosen the proper microprocessor for your application, go to the System Components section. These are arranged by bit size, then alphanumerically by microprocessor, and shows all of the available peripheral devices that work with a particular microprocessor.

Finally, there is a General Purpose section describing devices that can be used in many different microprocessor systems, not just in certain families.

MICROPROCESSORS

CISC

RISC

Microcontrollers

SYSTEM COMPONENTS

Bit Slice

1-Bit

4-Bit

8-Bit

8/16-Bit

12-Bit

16-Bit

16/32-Bit

32-Bit

Peripheral Controllers

General Purpose Devices

MICROPROCESSORS—Complex Instruction Set

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
4 Bit																	
1400																	
4			2Kx8	NMOS	40	8	75	128x4	2048			0.45	10/20				
4			2Kx8	PMOS	40	8	75	128x4	2048			0.3	15/30				
4			512	NMOS	16	8	48	16x4	512			0.45	10/20				
4	4		1K	NMOS	40	8	68	64x4				0.45	10/20				
4	4		2K	NMOS	64	8	75	64x4				0.45	10/20				
4	4		512	CMOS	16	8	48	16x4	512x8			0.5	10/20				
4	4	8	2K	CMOS	40	8	75	128x4	2Kx8			0.5	10/20				
4	4	8	512	CMOS	18	8	50	16x4	512x8			0.5	10/20				
4	4	8	512x8	NMOS	18	8	50	16x4	512			0.45	10/20				
4	4	8	768x8	NMOS	28	8	57	32x4	768			0.45	10/20				
4	4	8	768x8	PMOS	28	8	57	32x4	768			0.3	15/30				
4	4	8	1024	CMOS	40	8	75	64x4	1024			0.5	10/20				
4	4	8	1024	PMOS	40	8	75	64x4	1024			0.3	15/30				
1500																	
4			4K	NMOS	40	8	124	152x4	2048x8			4	2/4				
4			4K	NMOS	40	8	124	256x4	4096x8			4	2/4				
4			4K	NMOS	64	8	124	152x4	2048x8			4	2/4				
4			4K	NMOS	64	8	124	256x4	4096x8			4	2/4				
8840/50																	
4			1K	CMOS	28	8/16	72	64x4	1Kx8			2	3				
4			1K	CMOS	28	8/16	72	64x4	1Kx8			2	3				
4			1K	CMOS	28	8/16	72	64x4	1Kx8			2	3				
4			1K	CMOS	42	8/16	70	64Kx4	1Kx8			2	3		3		
4			1K	CMOS	42	8/16	70	64Kx4	1Kx8			2	3				
4		8	2K	CMOS	42	8/16	70	128x4	2Kx8			2	3	2	1		
4		8	2K	CMOS	42	8/16	70	128x4	2Kx8			2	3	2	1		
88200																	
4	4	8	512	CMOS	16	8/16	37	16x4	512x8			2	3				
4	4	8	1024	CMOS	16	8/16	38	32x4	1Kx8			2	3				
88500																	
4		8	2K	CMOS	42	8/16	70	128x4	2Kx8			2	3		4		
4	4		4K	CMOS	42	8/16	70	192x4	4Kx8			2	3		4		
4	4		4K	CMOS	70	8/16	72	196x4	4Kx8			2	3		4		
4	4	8		CMOS	80	8/16	70	192x4	3Kx8			4.5	6.67			4	3
4	4	8		CMOS	80	8/16	71	256x4	4Kx8			4.5	6.67			4	3

I/O Ports		Peripherals (No./Resolution)		Comments	Device	Source	Line
No./Type		Timer/Counter	A/D Converter	D/A Converter			
				All the MN14XX series members are available in at least one other process type.	MN1405	Panasonic	5
				All the MN14XX series members are available in at least one other process type.	MN1435	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1404	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1498	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1499	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1454	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1455	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1453	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1403	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1402	Panasonic	10
				All the MN14XX series members are available in at least one other process type.	MN1432	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1450	Panasonic	
				All the MN14XX series members are available in at least one other process type.	MN1430	Panasonic	
6 4-bit	1 8-bit			All the MN15XX series members have bidirectional I/O lines, 8-Bit serial shift register, and power down feature to save contents of RAM.	MN1542	Panasonic	15
6 4-bit	1 8 bit			All the MN15XX series members have bidirectional I/O lines, 8-bit serial shift register, and power down feature to save contents of RAM.	MN1544	Panasonic	
12 4-bit	1 8-bit			All the MN15XX series members have bidirectional I/O lines, 8 bit serial shift register, and power down feature to save contents of RAM.	MN1562	Panasonic	
12 4-bit	1 8-bit			All the MN15XX series members have bidirectional I/O lines, 8-bit serial shift register, and power down feature to save contents of RAM.	MN1564	Panasonic	
23 lines	1 8-bit			TTL/CMOS compatible.	MB8854	Fujitsu	20
23 lines	1 8-bit			TTL/CMOS compatible.	MB8854A	Fujitsu	
23 lines	1 8-bit			TTL/CMOS compatible.	MB8854L	Fujitsu	
37 lines	1 8-bit			TTL/CMOS compatible.	MB8851	Fujitsu	
37 lines	1 8-bit			TTL/CMOS compatible.	MB8853	Fujitsu	
37 lines	1 8-bit			TTL/CMOS compatible.	MB8851A	Fujitsu	
37 lines	1 8-bit			TTL/CMOS compatible.	MB8851L	Fujitsu	
10 lines				TTL/CMOS compatible.	MB88201	Fujitsu	25
12 lines				TTL/CMOS compatible.	MB88202	Fujitsu	
36 lines	1 8-bit			TTL/CMOS compatible.	MB88503	Fujitsu	30
36 lines	1 8-bit			Other Vcc ranges available, TTL/CMOS compatible.	MB88501	Fujitsu	
29 lines	1 8-bit			LCD driver, TTL/CMOS compatible.	MB88541	Fujitsu	
21 lines	1 8-bit	1 6-bit		On-chip LCD driver, PLL for digital tuning systems	MB88561	Fujitsu	
21 lines	1 8-bit	1 6-bit		On-chip VFD driver, PLL for digital tuning systems	MB88562	Fujitsu	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
88500																	(Cont'd)
4	4	8		CMOS	80	8/16	76	256x4	4Kx8			3	2			4	
4	4	8		CMOS	80	8/16	80	256x4	4Kx8			3	2			4	
4	4	8		CMOS	80	8/16	82	256x4	6Kx8			3	2.5			4	
4	4	8		CMOS	80	8/16	82	256x4	6Kx8			4	1.5			4	
4	4	8		CMOS	80	8/16	82	256x4	8Kx8			3	2.5			4	
4	4	8		CMOS	80	8/16	82	256x4	8Kx8			4	1.5			4	
SM Series																	
4			2Kx8	CMOS	60	8	94	128x4	2048			2.5	1.6				
4			1016	CMOS	16/20	8	40	56x4	1016			2	2				
4			1197	CMOS	48	8	52	64 40	1197			0.032 *	61				
4			1260	CMOS	60	8	45	32x4 + 20x4	1260			0.032 *	91.6				
4			1827	CMOS	60	8	51	65x4	1827			0.032 *	61				
4			2016	CMOS	80	8	49	64x4 + 24x4	2016			0.032 *	91.6				
4			2268	CMOS	60	8	54	96x4	2268			0.032 *	61				
4			2772	CMOS	60	8	49	96x4 + 32x4	2772			0.032 *	61				
4			3072	CMOS	64	9	93	160x4 + 16x2	3072			0.27 *	11				
4			4032	CMOS	60	8	55	128x4	4032			0.032 *	61				
4			4096	CMOS	60	8	94	256x4	4096			2.5	1.6				
4	4		6K	CMOS	64	9	94	256x4	6Kx9			4	2				
4	4	8		CMOS	20	8	41	32x4	762x8			4	1				
4	4	8	4K	CMOS	80	8	55	80x4/48x4	4032x8/256x6			0.032	61				
4	4	8	4K	CMOS	80	8	99	192x4	4096x4			2.5	1				
4	4	8	6K	CMOS	80	8	99	256x4	6144x8			2.5	1				
4	4	8	8K	CMOS	80	4	97	1792	8Kx8			2.5	1.6				
4	4	8	14K	CMOS	60	8	51	65x4	14K			0.032 *	61				
4	4	8	30K	CMOS	64	10	93	168x4	30K			0.09 *	11				
4	4	8	508	CMOS	16/20	8	40	32x4	508			2	2				
4	8		2K	CMOS	60	8	46	64x4/36x4	2Kx8/128x6			0.032	92				
4	8		2K	CMOS	60	8	46	64x4/36x4	2Kx8/128x8			0.032	92				
4	9		2K	CMOS	64	9	93	192x4	4Kx9			4	2				
4	9		4K	CMOS	48	9	104	256x4	4Kx9			4	4				
4	9		8K	CMOS	64	4	94	1024x4	8Kx9			4	1				
HMCS40																	
4				CMOS	80	10	71	160x4	2.1Kx10			0.5	10				
4			4096	CMOS	80	10	71	256x4	4Kx10			1	5	1	2		
4		10	2Kx10	CMOS	54	10	71	160x4	2Kx10			0.5	20	1	2	6	4
4		10	2Kx10	CMOS	80	10	71	160x4	2Kx10			0.5	10	1	2		
4		10	4096	CMOS	42	10	87	256x4	4Kx10			0.9	20	1	2	6	4
4		10	4096	CMOS	54	10	87	256x4	4Kx10			0.9	20	1	2	6	4
4	4	10	2048	CMOS	42	10	87	160x4	2Kx10			0.5	20	1	2		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
29 lines	1 + 8-bit			On-chip LCD driver with 24-segment output.	MB88543	Fujitsu	5
29 lines	1 8-bit			On-chip LCD driver with 32-segment output.	MB88545	Fujitsu	
68 lines	1 8-bit	5-bit prog.		9-bit programmable generator	MB88552	Fujitsu	
68 lines	1 8-bit	5-bit prog.		High speed version of 88552.	MB88552H	Fujitsu	
68 lines	1 8-bit	5-bit prog.		9-bit programmable pulse	MB88551	Fujitsu	
68 lines	1 8-bit	5-bit prog.		High speed version of 88551.	MB88551H	Fujitsu	
				Capable of driving at 3 V Serial input/output.	SM551	Sharp	10
				High-speed, low-end type.	SM591	Sharp	
				Built-in LCD driver.	SM500	Sharp	
				Built-in LCD driver circuit.	SM531	Sharp	
				Built-in LCD driver.	SM5A	Sharp	
				Built-in melody generator circuit and LCD driver circuit.	SM530	Sharp	
				Optionally expandable for external RAM, built-in LCD driver circuit.	SM4A	Sharp	15
				Multi LCD display. Built-in LCD driver.	SM510	Sharp	
				Optionally expandable for external RAM.	SM520	Sharp	
				Built-in melody generator circuit and LCD driver.	SM511	Sharp	
				Capable of driving at 3 V Serial input/output	SM552	Sharp	
					SM579	Sharp	
					SM595	Sharp	20
					SM512	Sharp	
					SM5E3	Sharp	
					SM5E4	Sharp	
					SM5E5	Sharp	
					SM5L	Sharp	
					SM525	Sharp	25
				High-speed, low-end type.	SM590	Sharp	
					SM535	Sharp	
					SM534	Sharp	
					SM579A	Sharp	
					SM5F3	Sharp	
					SM5J5	Sharp	30
32 lines				Drives seven segment LCDs, on chip counter timer. 32 I/O lines.	HD44790	Hitachi	35
44 lines				Power-on-reset, on-chip LCD drive	LCD-IV	Hitachi	
44 lines				Stand-by mode, on-chip counter	HMCS45CL	Hitachi	
32 lines				Power-on-reset, on-chip LCD drive	LCD-III	Hitachi	
32 lines				Stand-by mode, on-chip counter	HMCS46CL	Hitachi	
44 lines				Stand-by mode, on-chip counter	HMCS47CL	Hitachi	
32 lines	1 8-bit			Stand-by mode, on-chip counter	HMCS44CL	Hitachi	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
HMCS400																	
4		10	2Kx10	CMOS	64	10	99	160x4	2Kx10			2.25	4	3	2		
4		10	2Kx10	CMOS	64	10	99	160x4	2Kx10			4.5	2	3	2		
4		10	2Kx10	CMOS	64	10	99	160x4	2Kx10			6.2	1.33	3	2		
4		10	4096	CMOS	64	10	99	256x4	4Kx10			2.25	4	3	2		
4		10	4096	CMOS	64	10	99	256x4	4Kx10			4.5	2	3	2		
4		10	4096	CMOS	64	10	99	256x4	4Kx10			6.2	1.33	3	2		
4	4	10		CMOS	64	10	101	512x4	8Kx10				3.55	3	2		
4	4	10		CMOS	64	10	101	512x4	8Kx10				1.78	3	2		
4	4	10	2Kx10	CMOS	42	10	98	160x4	2Kx10			4.5	2	1	2		
4	4	10	2Kx10	CMOS	42	10	98	160x4	2Kx10			6.2	1.33	1	2		
4	4	10	2048	CMOS	42	10	98	160x4	2Kx10			2.25	4	1	2		
8	16			CMOS	64		159	1K				15	—/0.8	8	3		
8 Bit																	
1650																	
8			1024x13	NMOS	40	13	57	64x8	1024x13			8	1/2				
8	8	12	512x12	NMOS	18	12	30	32x8	512x12			4	2/4			32	
1800																	
8	8	16	64K	CMOS	40	8/24	91					5	3.2/4.8				
8	8	16	64K	CMOS	40	8/24	91					6.4	5/7.5				
8	8	16	64K	CMOS	40	8/24	123	64x8				5	3.2/16				
8	8	16	64K	CMOS	40	8/24	123	64x8				5	3.2/16				
8	8	16	64K	CMOS	40	8/24	123	64x8	2Kx8			5	3.2/16				
3870																	
8	8		4K	NMOS	40	8/24	70	128x8	4Kx8			4	1/6.5				
8	8		2112	NMOS	40	8/24	70	128x8	2Kx8			4	1/6.5				
HD63/68P01																	
8			64K	NMOS	40	8,16,24	72	128x8	4K/8Kx8			1.25	0.8/10				
6500																	
8			64K	CMOS	40	8	64					4					
8	8			NMOS	40	8/24	56	64x8	2Kx8			2	1/3.5				
8	8		Int.	CMOS	40	8	71	512x8	16384			4	0.5				
8	8	8	64K	NMOS	28	8/24	56					2	1/7				
8	8	16	8K	NMOS	40	8/24	56	64x8	2Kx8			2	1/7				
8	8	16	16K	NMOS	40	8	71	1536	Ext.			2	1.0				
8	8	16	16K	NMOS	40	8/24	60	192x8	3Kx8			2	1/3.5				
8	8	16	16K	NMOS	40	8/24	60	192x8	3072x8			2	1/7				
8	8	16	16K	NMOS	40	8/24	60	192x8	4096x8			2	1/7				
8	8	16	16K	NMOS	64	8/24	60	192x8	3072x8			2	1/7				
8	8	16	64K	CMOS	40	8	64					4	0.5/3.5				
8	8	16	64K	CMOS	40	8	64					4					
8	8	16	64K	CMOS	40	8	64					4					
8	8	16	64K	CMOS	40	8/24	56					3	0.67/2.3				
8	8	16	64K	CMOS	40	8/24	68					4	0.5/3.5				

I/O Ports		Peripherals (No./Resolution)		Comments	Device	Source	Line
No./Type	Timer/Counter	A/D Converter	D/A Converter				
50 lines	2 8-bit			26 high voltage lines (40V max), serial interface	HMCS402CL	Hitachi	5
58 lines	2 8-bit			26 high voltage lines (40 V max), serial interface	HMCS402C	Hitachi	
58 lines	2 8-bit			26 high voltage lines (40 V max), serial interface	HMCS402AC	Hitachi	
58 lines				26 high voltage (40V max), serial interface	HMCS404CL	Hitachi	
58 lines				26 high voltage (40 V max), serial interface	HMCS404C	Hitachi	
58 lines				26 high voltage (40 V max) Serial Interface	HMCS404AC	Hitachi	
58 lines	2 8-bit			26 high voltage (40 V max) lines	HMCS408AC	Hitachi	
58 lines	1 8-bit			26 high voltage (40 V max) lines	HMC408CL	Hitachi	10
36 lines	1 8-bit			24 high voltage (40 V max) lines	HMCS412C	Hitachi	
36 lines	1 8-bit			24 high voltage (40 V max) lines	HMCS412AC	Hitachi	
31 lines	1 8-bit				HMCS412CL	Hitachi	
40 lines	2 8-bit	1 8-bit		Two zero-cross detect inputs	μPD78C17	NEC	
				Expanded PIC1650 instruction set. 1024x13-Bit program ROM. 64 8-Bit registers, 6 level stack, 2 external interrupts. 32 I/O lines.	PIC1670	Microchip	
12 lines	1			Crystal oscillator. Available in three temperature ranges including -40°C to 110°C.	PIC1654	Microchip	
					CDP1802BC	Harris	15
					CDP1802A	Harris	
	1 8-bit				CDP1805AC	Harris	
	1 8-bit				CDP1806AC	Harris	
	1 8-bit				CDP1804AC	Harris	
32 lines	1 8-bit			One chip microcomputer. Programmable hardware, 3K, 2K, 1K PROM versions available.	MK3870	SGS-Thomson	20
				Programmable hardware timer, baud rate generator.	MK3873	SGS-Thomson	
				HD6801 with piggyback socket for EPROM 2732.	HD68P01M0	Hitachi	
				Pin compatible with NMOS 6500, bus compatible with MC6800	G65SC12	CMD Micro	25
32 lines	1 16-bit			Software compatible with NCR6502, Available in DIP and PLCC.	NCR6500/1	NCR	
					R65C10	Rockwell	
				Bus compatible with 6800.	R6500	Rockwell	30
32 lines	1 16-bit			Software compatible with R6502	R6500/1	Rockwell	
32 lines	2 16-bit			Available in DIP and PLCC.	R6518	Rockwell	
32 lines	2 16-bit			On-board UART	NCR6500/11	NCR	
32 lines	2 16-bit			On board USART	R6500/11	Rockwell	
32 lines	2 16-bit			R6500/11 with 4K ROM	R6500/15	Rockwell	
56 lines	2 16-bit			On board USART	R6500/12	Rockwell	
				Pin compatible with NMOS 6500 processors, bus compatible with MC6800. On-board clock oscillator.	G65SC02	CMD Micro	35
				Bus compatible with MC6800. On board clock oscillator.	G65SC102	CMD Micro	
				Bus compatible with MC6800. On board clock oscillator.	G65SC112	CMD Micro	
				CMOS NCR6502	NCR65C02	NCR	
				CMOS R6502	R65C02	Rockwell	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
6500 (Cont'd)																	
8	8	16	64K	CMOS	40	8/24	68					4	0.5/3.5				
8	8	16	64K	CMOS	40	8/24	68					4	0.5/3.5				
8	8	16	64K	CMOS	60	8		64x8	2Kx8			2					
8	8	16	64K	CMOS	68	8	180	192x8	4096x8			4	0.25/4				
8	8	16	64K	NMOS	40	8/24						2	0.5/3.5				
8	8	16	64K	NMOS	40	8/24	40					1.2	1/7	1	1		
8	8	16	64K	NMOS	40	8/32	56					4	0.25/40				
8	8	16	64K	NMOS	64	8/24	60	192x8				2	1/7				
8	8	16	64K	NMOS	64	8/24	60	192x8	256x8			2	1/7				
8	16	24	16M	CMOS	40	8/16	91					8	1			6	
6800																	
8			64K	NMOS	40	8/24	78	128x8				1.25	0.8/10				
8	8		2K	HMOS	28	8/24	59	64x8	1.1Kx8			2	1/5.5				
8	8		2K	HMOS	28	8/24	59	64x8	1.8Kx8			2	2/11				
8	8		4K	HMOS	20	8/24	42	32x8	0.5x8			0.9	0.6/14				
8	8		4K	HMOS	20	8/24	42	32x8	1Kx8			0.9	0.6/14				
8	8		4K	HMOS	20	8/24	42	32x8	1Kx8			11	0.6/14				
8	8		4K	HMOS	28	8/24		32x8	1Kx8			11	0.6/14				
8	8		4K	HMOS	28	8/24	42	32x8	1Kx8			0.9	0.6/14				
8	8		4K	HMOS	28	8/24	59	64x8	1480x8			1	2/11				
8	8		4K	HMOS	28	8/24	59	104x8	3.7Kx8			1	2/11				
8	8		4K	HMOS	40	8/24	59	64x8	2Kx8			1	2/11				
8	8		4K	HMOS	40	8/24	59	64x8	2Kx8			1	2/11				
8	8		4K	HMOS	40	8/24	59	64x8	2Kx8			1	2/11				
8	8		4K	HMOS	40	8/24	59	112x8		3.8Kx8		1	2/11				
8	8	8		CMOS	28	8/16		64x8	1100x8				1				
8	8	8		CMOS	28	8/16		64x8	1804x8				1				
8	8	8		CMOS	28	8/16		64x8	2508x8				1				
8	8	8		CMOS	40	8/24		86x8	3848x8				1				
8	8	8		CMOS	40	8/24		96x8					1				
8	8	8		CMOS	40	8/24		96x8	2056x8				1				
8	8	8		CMOS	40	8/24		96x8	3848x8				1				
8	8	8		CMOS	40	8/24		128x8					1				
8	8	8		CMOS	40	8/24		128x8					0.8				
8	8	8		CMOS	40	8/24		128x8	2Kx8				0.8				
8	8	8		CMOS	40	8/24		128x8	2Kx8				1				
8	8	8		CMOS	40	8/24		128x8	4Kx8				1				
8	8	8	8K	HCMOS	68	8-24	62	176x8	6208x8			4	0.25/1.0	4	1	5	
8	8	12	2K	CMOS	20	8/24	60	128x8	2352x8			2.1	1/5.5		4		
8	8	12	2K	CMOS	20	8/24	60	128x8	2352x8			2.1	1/5.5		4		
8	8	12	2K	CMOS	20	8/24	60	128x8	2352x8			4.2	0.5/2.75		4		
8	8	12	4K	CMOS	40	8/24	60	192x8	3840x8			2.1	1/5.5		6	1	

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				On-chip oscillator, bus Three-State capability, quadrature clock, R6500 software compatibility.	R65C102	Rockwell	
				Slave processor, bus Three-State capability	R65C112	Rockwell	
27 lines	1 16-bit			Uses 65SC00 CPU, on board sine wave generator, bus compatible with 6800.	G65SC150	CMD Micro	
7	4			I/O or external memory mode; four timers; UART, LAN, Toolbox Emulation Interface	W65C134	WDC	(3754)
				Bus compatible with 6800, 68000.	R6502	Rockwell	5
					6502	Krueger	
				On-chip Clock, IRQ, NMI, RYD, BUS compatible with MC6800	UM6502	UMC	
32 lines	1 16-bit			On board USART	R6511Q	Rockwell	
32 lines	2 16-bit			On board USART	R6500/13	Rockwell	
24 lines				Runs G65SC02 code.	G65SC816	CMD Micro	10
				64 Bytes RAM retainable on powerdown.	HD68P01V07	Hitachi	
20 lines	1 8-bit			Timer/counter.	MC6805P2	Motorola	
20 lines	1 8-bit			Self check, EPROM version available.	MC6805P6	Motorola	
12 lines	1 8-bit			20-pin version of MC6804P2,	MC6804J1	Motorola	
12 lines	1 8-bit			20-pin version of 6804P2	MC6804J2	Motorola	15
12 lines	1 8-bit			20-pin version of 6804P2, extensive self check.	EF6804J2	SGS-Thomson	
20 lines	1 8-bit			64 byte data ROM, self check.	EF6804P2	SGS-Thomson	
20 lines	1 8-bit			64 byte data ROM, self check.	MC6804P2	Motorola	
21 lines		1 8-bit		SPI, watchdog timer, self check.	MC6805S2	Motorola	
21 lines	4 8/16-bit	1 8-bit		Serial communication port	MC6805S3	Motorola	20
31 lines				A/D on chip.	MC6805R2	Motorola	
32 lines				Self check.	MC6805U2	Motorola	
32 lines	1 8-bit	1 8-bit		Self check.	EF6805R3	SGS-Thomson	
31 lines	1 8-bit	1 8-bit		24 programmable lines, EPROM	MC68705R3	Motorola	
20 lines				TTL/CMOS compatible I/O	HD6805S1	Hitachi	25
20 lines				TTL/CMOS compatible I/O	HD6805S6	Hitachi	
19 lines				TTL/CMOS compatible I/O lines, PLL logic	HD6805T2	Hitachi	
23 lines				TTL/CMOS compatible I/O lines	HD6805W1	Hitachi	
23 lines	1 8-bit				HD6805W0	Hitachi	
24 lines					HD6805U1	Hitachi	30
24 lines					HD6805V1	Hitachi	
13 lines	1 16-bit			Serial communications interface	HD6803	Hitachi	
13 lines	1 16-bit			Serial communications interface	HD6803-1	Hitachi	
31 lines				29 parallel I/O lines, two handshade control lines	HD6801S5	Hitachi	
31 lines				29 parallel I/O lines, two handshake control lines	HD680190	Hitachi	35
29 lines				Two handshade control lines	HD6801V0	Hitachi	
24 lines				8-bit Microcomputer with Liquid Crystal Driver Circuitry	MC68HC05L6	Motorola	
12 bidir	1 16-bit			Low-Power CDP68HC05S3	CDP68HCL05J3	Harris	
12 bidir	1 16-bit			Single-Chip CPU, SWI	CDP68HC05J3	Harris	
12/bidir.	1 16-bit			High-speed CDP68HC05J3	CDP68HSC05J3	Harris	40
24 bidir., 1 in, 1 out	1 8-bit			Low-Power CDP68HC05W4	CDP68HCL05W4	Harris	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
6800																	(Cont'd)
8	8	12	4K	CMOS	40	8/24	60	192x8	3840x8			2.1	1/5.5		6		
8	8	12	4K	CMOS	40	8/24	60	192x8	3840x8			4.2	0.5/2.75		6		
8	8	12	8K	CMOS	40	8	60	112x8				1	2/10				
8	8	12	8K	CMOS	40	8/24	60	176x8	7744x8			2.1	1/5.5		5		
8	8	12	1089	CMOS	28	8/24	60	64x8	1089x8			1	2/10	1	2	5	
8	8	12	2106	CMOS	40	8	61	112x8	2106x8			1	2/10	1	2	5	
8	8	13	2K	CMOS	40	8/24	60	176x8	4160x8			4.2	0.5/2.75		5		
8	8	13	4K	CMOS	40	8/24	60	176x8	4160x8			2.1	1/5.5		5		
8	8	13	4K	CMOS	40	8/24	59	176x8	7.9x8			2.1					
8	8	13	4K	CMOS	40	8/24	60	176	4Kx8			2.1	2/11				
8	8	13	4K	CMOS	40	8/24	60	176x8	4160x8			2.1	1/5.5		5		
8	8	13	8K	CMOS	40	8/24	60	176x8	7744x8			2.1	1/5.5		5		
8	8	13	8K	CMOS	40	8/24	60	176x8	7744x8			4.2	0.5/2.75		5		
8	8	16	64K	CMOS	40	8	61					5	2				
8	8	16	64K	CMOS	48/52	8/32	145	256x8	2Kx8	2Kx8		1/10	21				
8	8	16	64K	HMOS	40	8/24	82	128x8	2Kx8			1	2/12				
8	8	16	64K	HMOS	40	8/24	89	192x8				1.25	1.6/9.6				
8	8	16	64K	HMOS	40	8/24	89	192x8	4Kx8			1.25	1.6/9.6				
8	8	16	64K	NMOS	40	8/24	72					1.2	1/6	1	1		
8	8	16	64K	NMOS	40	8/24	72	128x8	4K/8Kx8			1.25	0.8/10			6	
8	8	16	64K	NMOS	40	8/32	59					1.2	1/7.5	2	1		
8	8	16	64K	NMOS	40	8/32	59					1.2	1/7.5	2	1		
8	8	16	64K	NMOS	40	8,16,24	72	128x8				2	1/6				
68000																	
16	32	20	1M	HMOS	64		56									16	
16	32	20	1M	HMOS	64		56									16	
16	32	20	1M	HMOS	64		56									16	
8048																	
8			4K	HMOS	40	8/24		128x8	2Kx8			11					
8	8		4K	CHMOS	40	8/16	97	128x8				11	1.4/2.8				
8051																	
8	8	8	64K	HMOS	40	8/24	111	128x8	4Kx8			12	4				
8	8	16	64K	NMOS	40	8/24	111	128x8				20	0.6/10		5		
8080																	
8	8	16	64K	NMOS	40	8/24	78					2	1.5/3.75			6 1	
8	8	16	65K	NMOS	40	8/24	78					2	1.5/3.75			6 1	

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
24 bidir., 1 in, 1 out	1 8bit			Single-Chip CPU with Two pulse width modulators	CDP68HC05W4	Harris	5
24 bidir., 1 in, 1 out	1 8 bit			High-speed CDP68HC05W4	CDP68HSC05W4	Harris	
16 lines				Single-chip CPU	CDP6805E2	Harris	
24 bidir., 7 in	1 16bit			Single-Chip CPU, SCI, SPI	CDP68HC05C8	Harris	
20 lines	1 8 bit			Single-chip CPU, self-check mode	CDP6805F2	Harris	
4 bidir.	1 8 bit			Single-chip CPU with 32 programmable bidirectional I/O lines	CDP6805G2	Harris	
24 bidir., 7 in	1 16 bit			High-speed CDP68HC05C4	CDP68HSC05C4	Harris	
24 bidir., 7 in	1 16bit			Low-Power CDP68HC05C4	CDP68HCL05C4	Harris	
32 lines	1 16-bit			68HC05C4 with 8K bytes of ROM	MC68HC05C8	Motorola	
32 lines	1 16-bit			Single-chip CPU, SCI SPI	MC68HC05C4	Motorola	10
24 bidir., 7 in	1 16bit			Single-Chip CPU, SCI, SPI	CDP68HC05C4	Harris	
24 bidir., 7 in	1 16bit			Low-Power CDP68HC05C8	CDP68HCL05C8	Harris	
24 bidir., 7 in	1 16 bit				CDP68HSC05C8	Harris	
16 lines				Enhanced 6805E2	CDP6805E3	Harris	
	1 16-Bit	1 8-Bit		Pulse Accumulator	MC68HC11	Motorola	15
29 lines	1 16-bit			On-chip clock, serial I/O, four selectable baud rates.	MC6801	Motorola	
13 lines	1 16-bit			ROMless 6801, external bus.	MC6803U4	Motorola	
29 lines	1 16-bit			Same as 6801 with 4K ROM and selectable baud rates.	MC6801U4	Motorola	
					6800	Krueger	
29 lines	1 16-bit			HD6801 with piggyback socket for EPROM 2732.	HD68P01M0	Hitachi	20
					6809	Krueger	
					6809E	Krueger	
				6800 CPU plus clock and RAM, 32 bytes standby RAM.	EF6802	SGS-Thomson	
				MC68008 completely code compatible with MC68000. General purpose machine.	MC68008	Motorola	25
				MC68008 completely code compatible with MC68000. General purpose machine.	TS68008-10	SGS-Thomson	
				MC68008 completely code compatible with MC68000. General purpose machine.	TS68008-8	SGS-Thomson	
27 lines	1 8-bit			Programmable ROM. Can be used with external RAM or ROM.	M8749H	Intel	
24 lines	1 8-bit			Can be used with external RAM or ROM, Military temperature.	M80C39	Intel	
	2 16-bit			Serial I/O port Boolean processor, 4K EPROM.	8751H	Intel	30
32 lines	2 16-bit			Serial I/O	SAB8031A	Siemens	
		512	1 16-bit	Faster versions also available, refurbished	8080A	Krueger (3548)	
512	1 16-bit			8080A-1 runs at 3.125 MHz max, -2 runs at 2.63 MHz max.	8080A	Intel	

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MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
8085A																	(Cont'd)
8	8	8	64K	CMOS	40	8/24	246					10	1.02/6.4		5		
8	8	8	64K	HMOS	40	8/24	102					3,5,6	0.67/1.3				
8	8	16	64K	CMOS	40	8/24	158					3	1.3		4		
8	8	16	64K	CMOS	40	8/24	246					8	1.28/8				
8	8	16	64K	NMOS	40	8/24						3				12	
8	8	16	64K	NMOS	40	8/24						5				12	
8	8	16	64K	NMOS	40	8/24	80					3	0.8/1.3			12	
8	8	16	64K	NMOS	40	8/24	80					5	1.4/2.8				
8	8	16	64K	NMOS	40	8/24	102					3	0.67/1.3			12	
8086																	
16	16	20	1M	CMOS	40	8/48	133					5	0.4/0.8				
16	16	20	1M	NMOS		8/48	150						0.4/0.8		5	8	6
16	16	20	1M	NMOS	40	8/48	133					5	0.4/0.8				
8088																	
8	16	20	1M	CMOS	40	8/32	133					5				14	
8	16	20	1M	CMOS	40	8/32	133					8				14	
8	16	20	1M	CMOS	40	8/32	133					8				14	
8	16	20	1M	CMOS	40	8/48	133					5					
8	16	20	1M	CMOS	40	8/48	133					8				14	
8	16	20	1M	CMOS	40	8/48	133					8					
8	16	20	1M	HMOS	40	8/48	46					5	0.4/4				
8	16	20	1M	HMOS	40	8/48	133					8				14	
8	16	20	1M	NMOS	40	8/48	133					5				14	
8	16	20	1M	NMOS	40	8/48	133	64x8				5					
8	16	20	64K	NMOS	40	8/24	133					2	1.5/3.75				
NSC800																	
8	8	16	64K	CMOS	40	8/32	158					1	4/23		5	22	
8	8	16	64K	CMOS	40	8/32	158					2.5	1.6/9.2		5	22	
8	8	16	64K	CMOS	40	8/32	158					4	1/5.75		5	22	
K-Series																	
8	16		1M	CMOS	64/68	8	65	512x8	16Kx8			12	0.333				
8	16		1M	CMOS	84/94	8	65	1Kx8	32Kx8			12	0.333				
8	16		1M	CMOS	84/94	8	65	1Kx8	32Kx8			12					
8	16		1M	CMOS	84/94	8	65	640x8	16Kx8			12	0.333				
8	16		1M	CMOS	84/94	8	65	640x8	16Kx8			12	0.333				
8	16		1M	CMOS	84/94	8	65	640x8	16Kx8			12	0.333				
8	16	1M		CMOS	64/68	8	512x8					12	0.333				
Z8																	
8			64K	NMOS	40	8-32	158					6					
8	8		124K	NMOS	40	8/24	129	128x8				4	2.2/4.25		4		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				Static operation; compatible with NMOS 8085; supports extended instructions	CA80C85S	Newbridge	
1 Serial				8085AH-1 runs 6 MHz, AH-2 runs 5 MHz. M8085AH Mil version.	8085AH	Intel	
				CMOS version of MSM8085A.	MSM80C85A	OKI (3600)	
				Compatible with NMOS 8085; supports extended instruction set	CA80C85B	Newbridge (3593)	
				8080A compatible with multiplexed bus operation.	TMP8085A	Toshiba	5
					TMP8085A-2	Toshiba	
				Faster versions also available, refurbished	8085A	Krueger (3548)	
				8080A compatible.	μPD8085A-2	NEC	
				Faster versions also available, refurbished	8085AH	Krueger (3548)	
					80C86A	Intel	10
	3 16-bit			Faster versions also available, refurbished	80186	Krueger (3548)	
					SAB8086	Siemens	
					80C88/883	Harris	
					80C88	Harris	
					80C88-2/883	Harris	15
					80C88A	Intel	
				Multiply and divide, Multibus compatible, military, industrial, commercial grades	80C88-2	Harris	
					80C88A-2	Intel	
				I/O processor concentrator and intelligent DMA controller. 4 special purpose input interrupts, 2 DMA request interrupts, 2 general purpose interrupt outputs.	8089	Intel	
					8088	AMD	20
				Faster versions also available, refurbished	8088	Krueger	
					μPD8088	NEC	
				Faster versions also available, refurbished	8088A	Krueger (3548)	
				Fully compatible with Z80 instruction set, power-save mode, system clock generator, NSC888 evaluation board available.	NSC800-1	National	
				Fully compatible with Z80 instruction set, power-save mode, system clock generator, NSC888 evaluation board available.	NSC800	National	25
				Fully compatible with Z80 instruction set, power-save mode, system clock generator, NSC888 evaluation board available.	NSC800-4	National	
54 lines	1 16-bit, 3 8-bit			Peripheral Management Unit	μPD78214	NEC	
64 lines	1 16-bit, 2 8-bit	1 8-bit	1 8-bit	4 PWM channels	μPD78P238	NEC	
64 lines	1 16-bit, 2 8-bit	1 8-bit	1 8-bit	Four PWM channels	μPD78238	NEC	
71 LINES	1 16-bit, 2 8-bit			Peripheral Management Unit	μPD78P224	NEC	30
64 lines	1 16-bit, 2 8-bit	1 8-bit	1 8-bit		μPD78234	NEC	
71 lines	1 16-bit, 2 8-bit			Peripheral Management Unit	μPD78224	NEC	
					μPD78213	NEC	
				8080A software compatible	Z80-6	Zilog	
				Program storage in separate 2716 EPROM, 4. Has piggyback 24-pin socket to program memory.	Z8603-MCU	Zilog	35

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
Z8 (Cont'd)																	
8	8		124K	NMOS	40	8/24	129	128x8	2Kx8			4	2.2/4.25		4		
8	8		124K	NMOS	40	8/24	129	128x8	4Kx8			4	1/1.5		4		
8	8		128K	NMOS	40	8/24		128x8				4					
Z80																	
8	8	16	64K	CMOS	40	8/32	158					10					
8	8	16	64K	NMOS	40	8/32	158					8					
8			64K	NMOS	40	8-32	158					4					
8	8	16	64K	NMOS	40	8/32	158					2.5					
8	8	16	64K	NMOS	40	8/32	158					2.5					
8	8	20	1M	CMOS	68	8/32	101					10	0.3/1.9				
μPD7800																	
8	16		1M	CMOS	64/68	8	65	384x8	8Kx8			12	0.333				
8	16		1M	CMOS	84/94	8	65	640x8	16Kx8			12	0.333				
V-Series																	
8	8		1M	CMOS	40	16	101					8					
8	16	20	1M	CMOS	40	16	101					8					
8	16	20	1M	CMOS	68	8/48	101					8					
12 Bit																	
6100																	
12			32K	CMOS		12						4					
16 Bit																	
1750																	
16	16	16	64K	CMOS	64/68	16	130					40			8	16	8
16	16	16	64K	CMOS	64/68	16	130					40			8	16	8
16	32	26	64	CMOS	144	16	250					30	0.3			29	
16	48	20		CMOS	64/68	16	154					40					
16	48	20		CMOS	64/68	16	154					40					
16	48	20	2M	CMOS	64	16	154					20				24	
16	48	20	2M	CMOS	64	16	154					30				24	
16	48	20	2M	CMOS	64	16	154					40	40.1			24	
16	48	20	2M	CMOS	64/68	16	154					40	0.1			24	
16	48	20	2M	CMOS	144	16	154					40	0.1			24	
6500																	
16	16	16	64K	CMOS	40	8/24	91					10					
16	16	24	16M	CMOS	40	8/24	91					10					
Z8000																	
16	32		8M	CMOS	40	8/32	110	16x16				6				16	
16	32		8M	CMOS	40	8/32	110	16x16				10				16	

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
32 lines				On-chip UART, and 2 counter/timers.	Z8601-MCU	Zilog	
32 lines				On-Chip UART and 2 counter/timers	Z8611-MCU	Zilog	
				ROMless Z8.	Z8681-MCU	Zilog	
				8080A software compatible	Z80-10	Zilog	5
				8080A software compatible	Z80-8	Zilog	
				8080A software compatible	Z80-4	Zilog	
				Faster versions also available, Refurbished	Z80CPU	Krueger (3548)	
					Z80	Zilog	
				Compatible with Z80 CPU software	Z180	Zilog	
					μPD78212	NEC	10
					μPD78220	NEC	
				High speed, CMOS 8088	μPD70108-8	NEC	
				High speed, CMOS 8088	70108-8	Micro-C	
				High integration with several peripherals on chip. Compatible with μPD70108, μPD70116.	μPD70208	NEC	
				PDP-8 instruction set compatible Fortran, Basic, Focal, Pascal available from outside vendors.	HM6100	Harris	15
	2 16-bit			SEAFAC certified to MIL-STD-1750A	P1750A	Performance	20
	2 16-bit			Enhanced MIL-STD-1750A CPU, available in 20/30/40 MHz versions	P1750AE	Performance	
				Implements MIL-STD-1750A Instruction Set. MMU Support Chip Available (L64550).	L64500	LSI Logic	
				Processor Interface Circuit with Built-In System Test	P1754	Performance	
				Four channels, transfers from/to I/O, local and global memory supported, expandable up to eight channels	P1755	Performance	
	2			SEAFAC Certified to MIL-STD-1750A	P1750A-20CM	Performance	
	2			SEAFAC Certified to MIL-STD-1750A	P1750A-30CM	Performance	
	2			SEAFAC Certified to MIL-STD-1750A	P1750A-40CM	Performance	
	2			MIL-STD-1750D Memory Management and Protection Unit with block protect unit and EDAC	P1753	Performance	
	2			P1750A, P1753, and P1754 in Hybrid Chip Carrier, 20/30/40 MHz versions available	P1757M	Performance	
				Pin Compatible with the 6502	W65C802	WDC	
				Software compatible with the 6500	W65C816	WDC	
				Z-BUS compatible	Z8002-06CPU	Zilog	
				Z-BUS compatible	Z8002-10CPU	Zilog	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
8086																	
16	16		500K	HMOS	40	1/4	69					8	1.25/100				
16	16		500K	HMOS	40	1/4	69					8	1.25/100				
16	16	20	1M	CMOS	40	8/32	133					5	0.4/0.8				
16	16	20	1M	CMOS	40	8/32	133					8	0.4/0.8				
16	16	20	1M	CMOS	40	8/48	133					5	0.4/0.8				
16	16	20	1M	CMOS	40	8/48	133					8	0.4/0.8				
16	16	20	1M	CMOS	40	8/48	133					8	0.4/0.8				
16	16	20	1M	CMOS	40	8/48	133					8	0.4/0.8				
16	16	20	1M	CMOS	40	8/48	133					8	0.4/0.8				
16	16	20	1M	HMOS		8/48	133					10	0.4/0.8				
16	16	20	1M	HMOS	40	8/48	133					5	0.4/0.8				
16	16	20	1M	NMOS	40	8/48	133					5	0.4/0.8				
16	16	20	1M	NMOS	40	8/48	133					5	0.4/0.8				
16	16	20	1M	NMOS	40	8/48	133					8					
16	16	20	1M	NMOS	40	8/48	133					10	0.4/0.8				
29000																	
16	16			TTL	52	8/16			512x16			10	0.1		6		6
16	16		User def.	TTL/ECL	52	8/16						10	0.1		6		6
16	16		User def.	CMOS	64	9	16					21					
16	16		User-def.	CMOS	64	9						4					
32000																	
16	16			XMOS	24							15	4/12				
16	32	20	16M	XMOS	48	8/32	128					10	0.3/—				
16	32	24	16 M	NMOS	48	8/200	133					10	0.3				
16	32	24	16M	CMOS	48	8/32	108					6				8	
16	32	24	16M	CMOS	48	8/32	108					10				8	
16	32	24	16M	CMOS	48	8/32	108					15	0.267/8			8	
16	32	24	16M	CMOS	48	8/32	108					15				8	
68000																	
8	32	20	1M	NMOS	48	16/80	56					12	0.75/0.78			16	
8	32	24	1M	NMOS	48	16/80	56					8	0.75/0.78				
16	32	24	16 M	HMOS	64	24/32	56					12.5	0.08/0.25			16	
16	32	24	16M	HMOS	64	16/80	56					4	0.4			16	
16	32	24	16M	HMOS	64	16/80	56					10	0.4			16	
16	32	24	16M	NMOS	64	16/80	56					6	0.4/—			16	
16	32	24	16M	NMOS	64	16/80	56					8	0.75/0.78			16	
80286																	
16	16	20	16M	CMOS	68	8/80	150					10				8	11
16	16	20	16M	CMOS	68	8/80	150					10				8	11

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				Numeric coprocessor for 8086, 8088, 80186, 80188	8087-2	Intel	
				Numeric coprocessor for 8086, 8088, 80186, 80188	8087-2	Krueger (3548)	
					80C86/883	Harris	
					80C86-2/883	Harris	
				Multiply/divide, Multibus compatible, Single Event Upset immune	HS80C86RRH	Harris	5
				Multiply and divide multibus system compatible, available in military temperature ranges.	HS80C86RH	Harris	
				Multiply and divide, multibus system compatible, 8 MHz version available.	MD80C86	Harris	
				Multiply and divide, multibus system compatible, 8 MHz version available, available in industrial or military temperature ranges.	80C86	Harris	
					80C86A-2	Intel	
				Same part as IAPX86/10.	8086	AMD	10
				8086 runs 5 MHz, -1 runs 10 MHz, -2 runs 8 MHz.	8086	Intel	
				Faster versions also available, refurbished	8086	Krueger (3548)	
					μPD8086-2	NEC	
					SAB8086-2	Siemens	
					SAB8086-1	Siemens	15
16				Microprogrammable	AM29116A	AMD	
16				Three-operand ALU, 16-bit barrel shifter, instruction set optimized for high-performance intelligent controllers.	AM29116	AMD	
				Four 2901, 2902 Look-ahead carry, 64 addressable registers, additional instructions	IDT49C402	IDT	
				Four 2901's and a 2902 Look-ahead Carry in one.	2901X4	IMI	
				Slave processor for floating point arithmetic	NS32081	National	20
				Real-Time Processor	NS32016RT-10	National	
					TI32016	TI	
				Slave processor interface	NS32C016RT-6	National	
				Slave processor interface	NS32C016RT-10	National	
				Slave processor interface	NS32C016	National	25
				Slave processor interface	NS32C016RT-15	National	
					TS68008	SGS-Thomson	
				Faster Versions also Available, Refurbished	68008	Krueger	
				Low-Power HCMOS Microprocessor	MC68HC000	Motorola	
					TS68000	SGS-Thomson	30
				Enhanced 68000 supporting true virtual memory with faster instruction set. Relocatable vector table to support multiple operating systems.	MC68010	Motorola	
				Faster Versions also available, Refurbished	68000	Krueger (3548)	
				Faster Versions also Available, Refurbished	68010	Krueger (3548)	
				On-chip memory management and protection	80C286-10	Harris	
					80C286-10/883	Harris	35

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers		
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other	
80286																	(Cont'd)	
16	16	20	16M	CMOS	68	8/80	150					12				8	11	
16	16	20	16M	CMOS	68	8/80	150					12.5				8	11	
16	16	20	16M	CMOS	68	8/80	150					12.5				8	11	
16	16	20	16M	CMOS	68	8/80	150					16				8	11	
16	16	20	16M	CMOS	68	8/80	150					16				8	&11	
16	16	20	16M	CMOS	68	8/80	150					20				8	11	
16	16	20	16M	CMOS	68	8/80	150					25				%8	11	
16	16	20	16M	CMOS	68	8/80	150					25				8	11	
16	16	20	16M	HMOS		8/48	150					8	0.8			8	11	
16	16	20	16M	HMOS	68	8/80	150					8	0.8			8	11	
16	16	20	16M	HMOS	68	8/80	150					10						
16	16	20	16M	HMOS	68	8/80	150					12				8	11	
16	16	20	16M	NMOS		8/48							0.8/—			8	11	
16	16	20	16M	HMOS	68	8/80	150					16				8	11	
Z8000																		
16	32		8M	CMOS	48	8/32	110	16x16				6	0.25/4			16		
16	32		8M	CMOS	48	8/32	110	16x16				10				16		
μCOM-70K																		
16	16	20	1M	CMOS	40	16	133					10						
32 Bit																		
32000																		
32	16		16 M	NMOS	48	8/24	128					10/15	0.3/22					
32	32		4 G	CMOS	175							30						
32	32		4 G	XMOS	84	8/32	108					0.267/8	3					
32	32		4 G	XMOS	84	8/32	128					10						
32	32		4 G	XMOS	84	8/32	128					12						
32	32		4 G	XMOS	84	8/32	128					15						
32	32		4 G	XMOS	120							15						
32	32		16M	CMOS	68	8/32	128					6				8	8	
32	32		16M	CMOS	68	8/32	128					10				8	8	
32	32	24	16 M	NMOS	68	8/24	128					10/15	0.3/19			8	8	
32	32	24	16 M	XMOS	64	8/32	108					1	0.4/12			8	8	
32	32	24	16M	CMOS	64	8/32	133					15	0.267/8			8	8	
TMS34010																		
32	32	32	128M	CMOS	68	16	130					50	0.16/6					
32	32	32	128M	CMOS	68	16	130					50	0.2					
32	32	32	128M	CMOS	68	16	130					50	0.16					
68000																		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
					80C286-12	AMD	
				On-chip memory management and protection.	80C286-12	Harris	
					80C286-12/883	Harris	
					80C286-16	AMD	
				On-chip memory management and protection.	80C286-16	Harris	5
					80C286-20	Harris	
					80C286-20	AMD	
					80C286-25	Harris	
				80286 processor with memory management. Upward compatible with iAPX86, 88 software.	80286	Intel	
					80286-8	AMD	10
				On-chip MMU	80286-10	AMD	
					80286-12	AMD	
				Faster versions also available, refurbished	80286	Krueger (3548)	
					80286-16	AMD	
				Z-BUS compatible	Z8001-06CPU	Zilog	15
				Z-BUS compatible	Z8001-10CPU	Zilog	
				High speed, CMOS 8086	μPD70116-10	NEC	
					TI32016T	TI	
				Virtual memory	NS32532	National	20
					NS32332	National	
				Virtual memory	NS32332-10	National	
				Virtual memory	NS32332-12	National	
				Virtual memory	NS32332-15	National	
				Advanced slave processor for virtual memory control	NS32382	National	
				Virtual memory processor	NS32C032-6	National	25
				Virtual memory processor	NS32C032-10	National	
					TI32032T	TI	
					NS32032	National	
					NS32C032	National	
				Graphics System Processor	SMJ34010-40	TI	30
				Graphics System Processor	TMS34010-40	TI	
				Graphics System Processor	TMS34010-50	TI	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Complex Instruction Set (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int. Ext.		Gen. Purp.	Other
68000																	(Cont'd)
32	32	32	4 G	CMOS	114	16/32	65					25					
32	32	32	4 G	CMOS	128	32	128					20				16	
32	32	32	4 G	CMOS	128	32	128					20				16	
32	32	32	4G	CMOS	114	16/32	65					12				16	
32	32	32	4G	HCMOS	179	16/128	120	4K				25					
80000																	
32	32		4 G	CMOS	84	32						10					
80386																	
32	32	32	4G	CMOS	132	8/56	180					24	0.08/1.9			8	

MICROPROCESSOR

MICROPROCESSORS—Reduced Instruction Set

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
32 Bit																	
R2000																	
32	32	32	1 G	CMOS	84	32	9					16.7	0.016/1.14				
32	32	32	1 G	CMOS	84	32	9					25	0.04/0.076				
32	32	32	1 G	CMOS	144	32	74					16.7	0.016/0.012			32	
32	32	32	1G	CMOS	84	32	19					20	0.05/0.6			32	
32	32	32	1G	CMOS	145	32	76					20	0.05/0.25			32	
32	32	32	4 G	CMOS	144	32	74					16	0.062				
R3000																	
32					144	32						16.7					
32	32	32			144	32	74					16.7					
32	32	32			144	32	74					20					
32	32	32			144	32	74					25					
32	32	32			144	32	74					33					
32	32	32	1 G	CMOS	172	32	74					25	0.04/0.08			32	
32	32	32	1G	CMOS	84	32	19					25	0.04/0.48			32	
32	32	32	1G	CMOS	84	32	19					33	0.03/0.36			32	
32	32	32	1G	CMOS	145	32	76					25	0.04/0.20			32	
32	32	32	1G	CMOS	145	32	76					33	0.03/0.15			32	
32	32	32	4 G	CMOS	144	32	74					25	0.04				
32	32	32	4 G	1 Micron	155 or 160		37				8K-1 1K-D	25 33 40	1/13	2	6	32	
R4000																	
64	64	36	54 G	.7 Mcron	179 or 447	32	52				8K 8KD	50	1/12	2	6	32	32
64	64	36	64 G	.7 Mcron	179 or 447	32	52				8K 8KD	1/12	2	6	32	32	
64	64	36	64 G	.7 Mcron	179 or 447	32	52				8K 8KD	50	1/12	2	6	32	32
SPARC																	
32	32			CMOS		32						25	0.04/—				
32	32		4G	CMOS	160	32						20	0.05/—				
32	32	32		CMOS	168	64	113				32x4	16	.062/-				
32	32	32		ECL	279	64						80	12.5 ns/ 62.5 ns				
32	32	32	4 G	CMOS	160	32	67					25	0.04/—			120	
32	32	32	4 G	CMOS	168	32	112					25	0.04/0.16				
32	32	32	4 G	CMOS	179	32	70					25					
32	32	32	4 G	CMOS	207	32	60	136x32				25				136	
32	32	32	4 G	CMOS	207	32	60	136x32				25				136	
32	32	32	4 G	CMOS	207	32	60	136x32				33				136	
32	32	32	4 G	CMOS	256	32	67					16.7	0.06/—				
32	32	32	4 G	HCMOS	208	32	88	136x32				33	0.03				
32	32	32	4G	CMOS	179	32	67					20/25	0.06/—			120	
32	32	32	4G	CMOS	207	32	64					40				136	

MASTER SELECTION GUIDE

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				Floating Point Coprocessor	LR2010	LSI Logic (3567)	5
				Floating Point Coprocessor	LR3010	LSI Logic (3567)	
				CPU, MMU and Cache Controller on-chip	LR2000	LSI Logic (3567)	
					SABR2010A	Siemens	
					SABR2000A	Siemens	
					79R2000	IDT	
					LR2000-16	LSI Logic (3567)	10
					LR3000-16	LSI Logic (3567)	
					LR3000-20	LSI Logic (3567)	
					LR3000-25	LSI Logic (7132)	
					LR3000-33	LSI Logic (3567)	
				CPU, MMU and Cache Controller on-chip	LR3000	LSI Logic (3568)	15
					SABR3010	Siemens	
					SABR3010A	Siemens	
					SABR3000	Siemens	
					SABR3000A	Siemens	
					79R3000	IDT	
	2 24-bits 1 12-bit			R3000 Compatible CPU Corc MIPS Embedded Processor	LR33000	LSI Logic	
	1 32-bit			Super Pipeline High Performance General Purpose Processor	LR4000PC	LSI Logic (3567)	20
	1 32-bit			Super Pipeline High Performance General Purpose Processor	LR4000MC	LSI Logic (3567)	
	1 32-bit			Super Pipeline High Performance General Purpose Processor	LR4000SC	LSI Logic (3567)	
				Floating Point Coprocessor for MB86901	MB86911	Fujitsu	25
				SPARC Integer Unit	MB86902-20	Fujitsu	
					AM29005	AMD	
				SPARC Compatible	B5000	Bipolar	
				SPARC Integer Unit	MB86902-25	Fujitsu	
				RISC processor, 32-Bit three-bus architecture	AM29000	AMD	30
				SPARC (RISC)	L64801	LSI Logic (3569)	
					CY7C601-25C	Cypress	
					CY7C601-25M	Cypress	
					CY7C601-33C	Cypress	
					MB86900	Fujitsu	35
				SPARC	L64811	LSI Logic (3569)	
				SPARC processor	MB86901	Fujitsu	
					CY7C601A	Cypress	

Bold face indicates additional data is provided on the page noted.

IC MASTER

MICROPROCESSORS—Microcontrollers

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
4 Bit																	
SMC6200																	
4			4K	CMOS	80	12	100	208x4	4096x12			0.5	11/366				
4			4K	CMOS	100	12	100	432x4	4096x12			0.5	11/366				
4			4K	CMOS	100	12	104	480x4	4096x12			0.5	11/366				
4			4K	CMOS	100	12	104	480x4	4096x12			0.5	153/366				
4	4	12	1K	CMOS	80	12	100	80x4	1Kx12			0.5	153/366	3	2		
4	4	12	1K	CMOS	80	12	100	80x4	1Kx12			0.5	153/366	3	2		
COP400																	
4			2048	NMOS	40	8	49	128x4				2.1	16/40				
4	8	9	512	NMOS	24	8	40	32x4	512			0.25	15/40				
4	8	9	512	NMOS	40	8	40	32x4				0.5	16/40				
4	8	9	512	NMOS	40	8	40	32x4				0.5	16/40				
4	8	11	1K	CMOS	20	8		64x4	1Kx8			0.25	4/dc			3	
4	8	11	1K	CMOS	24	8		64x4	1Kx4			4	4/dc			3	
4	8	11	1K	CMOS	28	8		64x4	1Kx4			4	4/dc		1	3	
4	8	11	1K	NMOS	28	8	49	64x4	1Kx8			2.1	4/10		1	3	
4	8	11	1K	NMOS	28	8	49	64x4	1Kx8			2.1	4/dc				
4	8	11	1K	NMOS	40	8	49	64x4				4	4/10				
4	8	11	1K	NMOS	40	8	49	64x4				4	4/10				
4	8	11	2K	CMOS	24	8		128x4	2Kx4			4	4/dc				
4	8	11	2K	CMOS	28	8		128x4	2Kx4			4	4/dc				
4	8	11	2K	NMOS	24	8	49	128x4	2Kx8			2.1	15/40				
4	8	11	2K	NMOS	28	8		160x4	2Kx8				4/10				
4	8	11	2K	NMOS	28	8	49	128x4	2Kx8			2.1	15/40				
4	8	11	2K	NMOS	28	8	49	128x4	2Kx8			2.1	15/40				
4	8	11	2K	NMOS	40	8	49	128x4				2.1	16/40				
4	8	11	2K	NMOS	40	8	49	160x4	2Kx8			1	4/10		4		
4	8	11	512	CMOS	20	8	40	32x4	512			0.25	4/dc				
4	8	11	512	CMOS	20	8	40	32x4	512x8			0.50	16/dc				
4	8	11	512	CMOS	20	8	40	32x4	512x8			2.0	4/dc				
4	8	11	512	CMOS	24	8	40	32x4	512			0.25	4/dc				
4	8	11	512	NMOS	20	8		64x4	512			.25	16				
4	8	11	512	NMOS	40	8	40	32x4				2.097	15/40				
OLMS40																	
4			1536	CMOS	60	8	52	40x4	1536x8			4	8/16				

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				LCD Driver/Controller, Analog Comparator, Watchdog Timer, LED Remote Transmitter, BLD Circuit	SMC6214	S-MOS	
				Similar to SMC6214 with more RAM, LCD segments, Larger package	SMC6215	S-MOS	
				Twin clock version of SMC6234	SMC62A34	S-MOS	
				Low power version of SMC6234	SMC62L34	S-MOS	
12 lines				Low power version of SMC6231	SMC62L31	S-MOS	5
12 lines				LCD Driver/Controller, BLD Circuit, Timer, Stopwatch Timer	SMC6231	S-MOS	
				Same as COP404LP except push pull memory interface drivers.	COP404LS	National	
16 lines				COP310L has extended temperature range (-40°C to -85°C).	COP410L	National	
				Same as COP401L except emulates COP413L with selected RC oscillator option.	COP401L-R13	National	10
				Same as COP401L except emulates COP413L with selected RC oscillator option.	COP401L-X13	National	
16 lines	1 8-bit			COP424C less eight general purpose inputs.	COP426C	National	
19 lines	1 8-bit			COP424C less 4 general-purpose inputs.	COP425C	National	
23 lines	1 8-bit			COP324C has extended temperature range (-40°C to 85°C).	COP424C	National	
23 lines				COP32X is extended temperature range version. Also available in smaller packages: COP421 series-24 pins, COP422 series-20 pins.	COP420	National	
23 lines					COP420L	National	15
				Has piggyback EPROM socket. Will accept: MM2716, NM27C16, MM2758A, MM2758B. 1K byte accessible.	COP402	National	
				Has piggyback EPROM socket. Will accept: MM2716, NM27C16, MM2758A, MM2758B. 1K byte accessible.	COP402M	National	
	1 8-bit			COP444C less 4 general-purpose inputs.	COP445C	National	
23 lines	1 8-bit			COP344C has extended temperature range (-40°C to 85°C).	COP444C	National	
12 lines					COP445L	National	20
23 lines				CPU version of COP2440 series, COP341 is extended temperature range version. 28 pins.	COP441	National	
23 lines					COP444L	National	
				Piggyback Microcontroller: CPU, RAM, I/O and EPROM socket. Accepts: MM2716, NMC27C16, MM2758A, MM2758B EPROMs. Same electrical specs as base P/N.	COP444LR	National	
				Has piggyback EPROM socket. Will accept MM2716, 2758A, 2758B or NM27C16 EPROM. 2K Byte accessible. Open drain memory interface drivers.	COP404LP	National	
35 lines	1 8-bit			CPU version of COP2440 series, COP340 is extended temperature range version. 40 pins.	COP440	National	25
16 lines				2 level subroutine stack, COP311C operates extended temperature range, COP211C operates full temperature range.	COP411C	National	
16 lines				COP313C has extended temperature range (-40°C to 85°C)	COP413C	National	
16 lines				20 pins COP313CH has extended temperature range.	COP413CH	National	
20 lines				2 level subroutine stack, COP310C operates extended temperature range, COP210C operates full temperature range.	COP410C	National	
					COP414L	National	30
				Romless microcontroller, emulated COP410L/COP411L, interfaces with external memory, will accept MM2716, NM27C16, MM2758A, MM2758B 1K byte accessories.	COP401L	National	
13 lines	1 12-bit			40 LCD segment output.	MSM58421GS	OKI	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
TLCS47																	
4			4K	NMOS		8		256x4				0.25					
4	4	8		CMOS	28		90	128x4	2Kx8			4.2	1.9	4	2		
4	4	8		CMOS	30		89	128x4	2Kx8			4.2	1	4	2		
4	4	8		CMOS	30		89	128x4	2Kx8			4.2	1.9	4	2		
4	4	8		CMOS	30		89	142x4	3Kx8			4.2	1.9	3	2		
4	4	8		CMOS	30		90	168x4	4Kx8			3.84	2.1	3	2		
4	4	8		CMOS	30		192x4	3Kx8	3Kx8			4.2	1.9	4	2		
4	4	8		CMOS	42		90	128x4	2Kx8			4.2	1.9	4	2		
4	4	8		CMOS	42		90	256x4	4Kx8			4.2	1.9	4	2		
4	4	8		CMOS	42/44		90	168x4	4Kx8			.96	8.3	4	2		
4	4	8		CMOS	42/44		92	512x4	8Kx8			4.2	1.9	4	2		
4	4	8		CMOS	42/44		92	512x4	8Kx8			4.2	1.9	4	2		
4	4	8		CMOS	64		89	192x4	2Kx8			4.2	1.9	4	2		
4	4	8		CMOS	64		89	256x4	4Kx8			4.2	1.9	4	2		
4	4	8		CMOS	64		89	256x4	4Kx8			4.2	1.9	4	2		
4	4	8		CMOS	67		89	192x4	2Kx8			4.2	1.9	4	2		
4	4	8		CMOS	67		89	256x4	416x8			4.2	1	4	2		
4	4	8		CMOS	80		92	1Kx4	8Kx8			.96	8.3	4	2		
4	4	8		CMOS	80		92	512x4	8Kx8			6	1.3	4	2		
8	8	8		CMOS	64		167		16Kx8			12.5	320ns	10	4		
8	8	8		CMOS	64		167	512x8	16x8			12.5	320ns	10	4		
μPD7500																	
0	4	11	1920 B	CMOS	28/44	8/24	62	64x4	1920 Bytes			5	.95	2	2	4	
0	4	13	8KB	CMOS	80	8/24	107	512x4	8K			5	.95	4	12	8	
0	4	14	16KB	CMOS	94	8/24	141	768x4	16KB			6	.67	7	4	32	
0	4	14	24KB	CMOS	80	8/24	141	1024x4	24K			6	.67	5	12	32	
0	4	14	24KB	CMOS	94	8/24	141	1024x4	24KB			6	.67	7	4	32	
0	4	15	32KB	CMOS		8/24	141	1024x4	32KB			5	.95	6	4	32	
0	4	15	32KB	CMOS	80	8/24	141	1024x4	32K			6	.67	5	12	32	
0	4	15	32KB	CMOS	80	8/24	141	1024x4	32K	32KB		6	.67	5	12	32	
0	4	15	32KB	CMOS	94	8/24	141	1024x4		32KB		6	.67	7	4	32	
0	4	15	32KB	CMOS	94	8/24	141	1024x4	32KB			6	.67	7	4	32	
4				CMOS	28/40	8	92	224x4	4Kx8			0.28	4		4	4	
4	8			CMOS	42		67	160x4	4Kx8			0.6	—/3.3	1	1		
4	8			CMOS	42		67	160x4	4x8			0.5	4/8	2	1		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				Evaluator chip for TLCS-47 series microprocessors. Use with external 4K ROM, 35 I/O lines.	TMP4700C	Toshiba	
21	2-12bit	8 bit		LED Driver	TMP47C241	Toshiba (3728)	
22	2-12bit	3 bit	6 bit	LED Driver	TMP47C236A	Toshiba (3728)	
24	2-12bit	3 bit	14 bit 8 bit		TMP47C237A	Toshiba (3728)	
24	2-12bit	3 bit	14 bit	LED Driver	TMP47C337A	Toshiba (3728)	5
23	2-12bit			DTMF Output	TMP47C454A	Toshiba	
22	2-12bit	3 bit	6 bit	LED Driver	TMP47C336A	Toshiba (3728)	
35	2-12bit			VFT Driver	TMP47C212A	Toshiba (3728)	
35	2-12bit			VFT Driver	TMP47C412A	Toshiba (3728)	
35	2-12bit			DTMF Output	TMP47C453A	Toshiba (3728)	10
30	2-12bit	3 bit	14 bit	LED Output	TMP47C834	Toshiba (3729)	
30	2-12bit	3-bit	14 bit 6 bit	LED Driver/On Screen DISP	TMP47P834	Toshiba	
28	2-12bit			LCD Driver	TMP47C221A	Toshiba (3728)	
28	2-12 bit			LCD Driver	TMP47C421A	Toshiba (3728)	
28	2-12bit 1-16bit			LCD Driver	TMP47C423A	Toshiba (3728)	15
28	2-12bit			LCD Driver	TMP47C220A	Toshiba (3728)	
28	2-12 bit			LCD Driver	TMP47C420A	Toshiba (3728)	
36	2-12bit			LCD Driver/DTMF	TMP47C855	Toshiba	
36	2-12bit 2-18bit			LCD Driver	TMP47P820	Toshiba	
54	8bitx4 16bitx1	8-bit		Stepping Motor Cntrl	TMP91C641	Toshiba	20
54	8bitx4 16bitx1	8-bit		Stepping Motor Control	TMP91C640	Toshiba	
6 Input 12I/O 8 Open Dr. I/O	(1) 8-bit			8-Bit Serial Channel	μPD75402A	NEC	
8 Input 20 I/O 8 Open dr. I/O	(2) 8-bit (1) 14-bit			LCD Controller/Driver Low Voltage 2.0-6.0V	μPD75308B	NEC	
16 Input 24 I/O	(3) 8-bit (1) 14-bit (1) counter	8/8 bit		FIP Controller/Driver (2) 8-bit Serial Channels	μPD75236	NEC	
16 Input 28I/O 20 Open Dr. I/O	(3) 8-bit (1) 14-bit	8/8-bit		Extensive I/O 8-bit Serial Channel	μPD75517	NEC	25
16 Input 24 I/O	(3) 8-bit (1) 14-bit (1) Counter	8/8-bit		FIP Controller/Driver (2) 8-bit Serial Channels	μPD75237	NEC	
8 CMOS IN. 20 CMOS I/O	3 8-bit (1) 14-bit			FIP Controller/Driver 8-bit Serial Channel	μPD75218	NEC	
16 Input 28 I/O 20 Open Dr. I/O	(3) 8-bit (1) 14-bit	8/8-bit		Extensive I/O 8-bit Serial Channel	μPD75518	NEC	
16 Input 28I/O 20 Open Dr. I/O	(3) 8-bit (1) 14-bit	8/8-bit		Extensive I/O 8-bit Serial Channel	μPD75P518	NEC	
16 Input 24 I/O	(3) 8-bit (1) 14-bit (1) Counter	8/8 bit		FIP Controller/Driver (2) 8-bit Serial Channels	μPD75P238	NEC	30
16 Input 24 I/O	(3) 8-bit (1) 14-bit (1) Counter	8/8-bit		FIP Controller/Driver (2) 8-bit Serial Channels	μPD75238	NEC	
32 lines	1 8-bit			8-bit serial interface, 40 I/O lines	μPD7508	NEC	
31 lines	1 8-bit			31 vacuum flurescent display outputs	μPD75CG38E	NEC	
32 lines		1 8-bit	1 8-bit		μPD75CG33E	NEC	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
μPD7500 / μPD75000																	(Cont'd)
4	8			CMOS	42		67	160x4	4x8			0.6	—/3.3	31 lines	1		
4	8			CMOS	64		92	128x4	2K			0.41		2	2		
4	8			CMOS	64		92	244x4	4K			0.41		2	2		
4	8			CMOS	64		107	512x4	1K			4.19	—/0.95				
4	8			CMOS	64	8	92	128x4	2Kx8			0.28	6.67	2	2		
4	8			CMOS	64	8	92	224x4	4Kx8			0.28	6.67	2	2		
4	8		1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4	8		1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4	8		2K	CMOS	40	8	92	208x4	4Kx8			0.28	10		4	4	
4	8		2K	CMOS	40	8	92	224x4	4x8			0.5	4		4	4	
4	8		2K	CMOS	40	8	92	244x4				4.19	—/2.86		4	4	
4	8		2K	CMOS	40/52	8	92	128x4	2Kx8			0.28	10		4	4	
4	8		2K	CMOS	42	8	67	128x4	2Kx8			0.6	3.3	2	1		
4	8		4K	CMOS	42	8	67	160x4	4Kx8			0.6	3.3	2	1		
4	8		4K	CMOS	42	8	67	160x4	4Kx8			0.6	3.3	2	1		
4	8		4K	CMOS	42/44	8	67	160x4	4Kx8			0.4	5	2	1		
4	8		4K	CMOS	42/44	8	107	512x4	4Kx8			5	0.95	4	12	8	
4	8		6K	CMOS	42/44	8	107	512x4	6Kx8			5	0.95	4	12	8	
4	8		8K	CMOS	42/44	8	104	512x4	8Kx8			5	0.95	4	12	8	
4			1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4			1K	CMOS	20	8	47	64x4	1Kx8			0.7	2.86				
4			1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4			1K	CMOS	24	8	45	64x4	1Kx8			0.7	2.86				
4	8		1.92K	CMOS	28/44	5	62	64x4	1920x8			5	0.95	1	2	4	
4	8		1.92K	CMOS	28/44	8	62	64x4	1920x8			5	0.95	1	2	4	
4	8		4K	CMOS	64	8	139	320x4	4Kx8			5	0.8	3	5	8	
4	8		4K	CMOS	80	8	107	512x4	4Kx8			5	0.95	4	12	8	
4	8		6K	CMOS	64	8	43	320x4	6016			5	0.8	3	5	8	
4	8		6K	CMOS	64	8	43	368x4	6016			5	0.8	6	4		
4	8		6K	CMOS	80	8	107	512x4	6Kx8			5	0.95			8	
4	8		8K	CMOS	42/44	8	104	512x4	8Kx8			5	0.95	4	12	8	
4	8		8K	CMOS	64	8	43	497x4	8Kx8			5	0.8				
4	8		8K	CMOS	64	8	43	512x4	8Kx8			5	0.8	3	5		
4	8		8K	CMOS	64	8	43	512x4	8Kx8			5	0.8	3	5		
4	8		8K	CMOS	64	8	107	512x4	8Kx8			5	0.95	7	12	8	
4	8		8K	CMOS	64	8	107	1536x4	8Kx8			5	0.95	7	12	8	
4	8		8K	CMOS	64	8	107	1536x4	8Kx8			5	0.95	7	12	8	

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
					μPD75CG28E	NEC	
23 lines	1 8-bit			LCD controller/driver	μPD7502A	NEC	
23 lines	1 8-bit			LCD controller/driver	μPD7503A	NEC	
					μPD75P056	NEC	
	4 8-bit			LCD controller/driver	μPD7502	NEC	5
	1 8-bit			LCD controller/driver	μPD7503	NEC	
16 lines	1 8-bit				μPD75P54	NEC	
16 lines	1 8-bit				μPD75P64	NEC	
16 lines	1 8-bit				μPD7554A	NEC	
15 lines	1 8-bit				μPD7564A	NEC	10
20 lines	1 8-bit				μPD75P56	NEC	
19 lines	1 8-bit				μPD75P66	NEC	
20 lines	1 8-bit				μPD7556A	NEC	
19 lines	1 8-bit				μPD7566A	NEC	
32 lines	1 8-bit			Vacuum fluorescent display driver, 8-bit serial interface,	μPD7508A	NEC	15
32 lines	1 8-bit				μPD7508B	NEC	
32 lines	1 8-bit				μPD75CG08HE	NEC	
32 lines	1 8-bit			8-Bit serial interface	μPD7507	NEC	
23 lines	1 8-bit			8-bit SIO, direct drive LED-16 lines.	μPD7527A	NEC	
31 lines	1 8-bit			8-Bit SIO, direct drive FIP	μPD7528A	NEC	20
35 lines	1 8-bit			8-Bit SIO, direct drive FIP	μPD7538A	NEC	
16 lines		1 8-bit		Direct drive LED-16 lines.	μPD7533	NEC	
34 lines	3 8-bit				μPD75004	NEC	
34 lines	3 8-bit				μPD75006	NEC	
34 lines	3 8-bit				μPD75008	NEC	25
					μPD75P54	NEC	
					μPD75P64	NEC	
					μPD75P56	NEC	
					μPD75P66	NEC	
22 lines	1 8-bit			General-purpose or slave microcomputer	μPD75402	NEC	30
22 lines	1 8-bit			General-purpose or slave microcomputer	μPD75P402	NEC	
52 lines	3 8-bit			8-Bit SIO, Four Comparators, LED direct drive	μPD75104	NEC	
32 lines	3 8-bit			LCD Controller/driver	μPD75304	NEC	
52 lines	3 8-bit			8-Bit SIO, Four Comparators, LED direct drive.	μPD75106	NEC	
28 lines	4 8-bit			8-Bit SIO, 14-Bit PWM.	μPD75206	NEC	35
32 lines	3 8-bit			LCD Controller/driver	μPD75306	NEC	
34 lines	3 8-bit				μPD75P008	NEC	
28 lines	4 8-bit			Piggyback version for uPD76206, uPD75208.	μPD75CG208	NEC	
52 lines	3 8-bit			EPROM version for uPD75104, uPD75106, uPD75108	μPD75P108	NEC	
	3 8-bit			8-bit SIO, four Comparators, LED direct drive.	μPD75108	NEC	40
48 lines	4	1 8-bit		8-bit interval timer, 8-bit timer/event counter, 14-bit watch timer, 16-bit multifunction timer	μPD75028	NEC	
48 lines	4	1 8-bit		8-bit interval timer, 8-bit timer/event counter, 14-bit watch timer, 16-bit multifunction timer	μPD75P048	NEC	
48 lines	4	1 8-bit		8-bit interval timer, 8-bit timer/event counter, 14-bit watch timer, 16-bit multifunction timer	μPD75048	NEC	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
μPD7500 / μPD75000 (Cont'd)																	
4	8		8K	CMOS	64	8	136	497x4	8Kx8			5	0.95				
4	8		8K	CMOS	64	8	136	512x4	8Kx8			5	0.95	3	5		
4	8		8K	CMOS	64	8	139	497x4	8x8			5	0.8	5	12		
4	8		8K	CMOS	80	8	104	512x4	8Kx8			5	0.95			8	
4	8		8K	CMOS	80	8	107	512x4	8Kx8			5	0.95	4	12	8	
4	8		8K	CMOS	80	8	107	512x4	8Kx8			5	0.95	4	12	8	
4	8		12K	CMOS	64	8	136	512x4	12Kx8			5	0.95	3	5		
4	8		12K	CMOS	64	8	136	512x4	12Kx8			5	0.95	3	5		
4	8		12K	CMOS	80	8	104	512x4	12Kx8			5	0.95			8	
4	8		12K	CMOS	80	8	136	512x4	12Kx8			5	0.95				
4	8		16K	CMOS	64	8	104	1Kx4	8Kx8			5	0.95	5	12		
4	8		16K	CMOS	64	8	136	512x4	12Kx8			5	0.95				
4	8		16K	CMOS	64	8	136	512x4	16Kx8			5	0.95				
4	8		16K	CMOS	64	8	136	512x4	16Kx8			5	0.95				
4	8		16K	CMOS	80	8	104	1Kx4	16Kx8			5	0.95	3	5	8	
4	8		16K	CMOS	80	8	104	512x4	16Kx8			5	0.95			8	
4	8		16K	CMOS	80	8	104	512x4	16Kx8			5	0.95			8	
4	8		16K	CMOS	80	8	104	768x4	16Kx8			5	0.95				
4	8		16K	CMOS	80	8	136	512x4	16Kx8			5	0.95				
4	8		16K	CMOS	80	8	136	512x4	16Kx8			5	0.95				
4	8		24K	CMOS	64	8	141	768x4	24Kx8			5	0.95	6	4	32	
4	8		32K	CMOS	64	8	141	1Kx4	32Kx8			5	0.95	6	4	32	
4	48		8K	CMOS	80	8	104	512x4	8Kx8			5	0.95			8	
8			16K	CMOS	64	8	136	512x4	16Kx8			5	0.95	3	5		
COP800 8 Bit																	
8				CMOS	44	8/24		128x8	8Kx8				1				
8				CMOS	44	8/24		192x8	8Kx8				1				
8	8		32K	CMOS	20	8	44	64x8	1Kx8			20	1		3		
8	8		32K	CMOS	20	8	44	64x8	1Kx8			20	1				
8	8		32K	CMOS	24	8	44	64x8	1Kx8			20	1		3		
8	8		32K	CMOS	24	8	44	64x8	1Kx8			20	1				
8	8		32K	CMOS	28	8	44	64x8	1Kx8			20	1		3		
8	8		32K	CMOS	28	8	44	64x8	1Kx8			20	1				
8	8		32K	CMOS	28	8	44	128x8	2Kx8			20	1				
8	8		32K	CMOS	28	8/24		64x8					1				
8	8		32K	CMOS	28	8/24		64x8					1		3		
8	8	15		CMOS	28	8/24	58	64x8	1Kx8			20	1				
8	8	15		CMOS	28	8/24	58	64x8	1Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	64x8	1Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	64x8	1Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	64x8	1Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	64x8	2Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	64x8	2Kx8			20	1		3		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
33 lines					μPD75CG208A NEC		
52 lines	3 8-bit				μPD75P108B NEC		
48 lines	4 8-bit			8-bit SIO, 14-bit PWM.	μPD75208 NEC		
36 lines				LCD controller/driver	μPD75P328 NEC		5
32 lines	3 8-bit			EPROM version for uPD75308.	μPD75P308 NEC		
32 lines	3 8-bit			8-bit SIO, 14-bit PWM.	μPD75308 NEC		
52 lines					μPD75112 NEC		
52 lines				Programmable FIP controller/driver	μPD75212A NEC		
32 lines				LCD controller/driver	μPD75312 NEC		10
					μPD75512 NEC		
48 lines	4 8-bit	1 8-bit			μPD75P036 NEC		
					μPD75216A NEC		
33 lines					μPD75CG216A NEC		
				Programmable FIP controller/driver	μPD75P216A NEC		15
32 lines	3 8-bit			LCD controller/driver	μPD75P316A NEC		
32 lines				LCD controller/driver	μPD75P316 NEC		
32 lines	3 8-bit			LCD controller/driver	μPD75316 NEC		
					μPD75336 NEC		
					μPD75P516 NEC		20
					μPD75516 NEC		
28 lines	4 timers			Programmable FIP controller/driver	μPD75217 NEC		
28 lines	4 timers			Programmable FIP controller/driver	μPD75P218 NEC		
36 lines	3 8-bit			LCD controller/driver	μPD75328 NEC		
52 lines	3 8-bit				μPD75116 NEC		25
					COP888CFMH National		
					COP888CGMH National		
				Software Selectable I/O Options.	COP822C National		
				EEPROM Version of COP822C	COP8722C National		
	1 16-bit			Software Selectable I/O Options	COP821C National		30
				EEPROM Version of COP821C	COP8721C National		
	1 16-bit			Software Selectable I/O Options	COP820C National		
				EEPROM Version of COP820C	COP8720C National		
	1 16-bit			Software Selectable I/O Options	COP840C National		
	1 16-bit				COP820CP-X National		35
	1 16-bit				COP840CP-X National		
					COP820CB National		
24 lines	1				COP821CB National		
20 lines	1				COP822CB National		
16 lines	1 16-bit				COP8620C National		40
20 lines	1 16-bit				COP8621C National		
16 lines	1 16-bit				COP8622C National		
24 lines	1 16-bit				COP8640C National		
20 lines	1 16-bit				COP8641C National		

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
8	8	15		CMOS	28	8/24	58	64x8	2Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	128x8				20	1		10		
8	8	15		CMOS	28	8/24	58	128x8				20	1		10		
8	8	15		CMOS	28	8/24	58	128x8				20	1		10		
8	8	15		CMOS	28	8/24	58	128x8				20	1		10		
8	8	15		CMOS	28	8/24	58	128x8	2Kx8			20	1		10		
8	8	15		CMOS	28	8/24	58	128x8	2Kx8			20	1		3		
8	8	15		CMOS	28	8/24	58	128x8	4Kx8			20	1		10		
8	8	15		CMOS	28	8/24	58	128x8	4Kx8			20	1		10		
8	8	15		CMOS	28	8/24	58	128x8	8Kx8			20	1		10		
8	8	15		CMOS	28	8/24	58	192x8				20	1		14		
8	8	15		CMOS	28	8/24	58	192x8	4Kx8			20	1		14		
8	16			CMOS	84			1K	16K			16	—/0.25			8	
8	16			CMOS	84			1K	16K			16	—/0.25			8	
8	16			CMOS	84			1K	16K			16	—/0.25			8	

6800

8				HCMOS	52	8-32		512x8	12Kx8								
8	8			CMOS	52	8/32	179	256x8				2.1	0.5				
8	8			CMOS	52	8/32	179	256x8		512x8		2.1	0.5				
8	8			CMOS	52	8/32	179	256x8	8Kx8	512x8		2.1	0.5				
8	8			CMOS	52	8/32	179	512x8				2.1	0.5				
8	8			CMOS	52	8/32	179	512x8	4Kx8			2.1	0.5/2				
8	8			CMOS	52	8/32	179	512x8	4Kx8			2.1	0.5				
8	8			HCMOS	28	16/24	192	112x8	2K								
8	8			HCMOS	40	8-32		176x8	4108x8	2Kx8		2.1					

7000

8				CMOS	28	8	61	128x8	2Kx8			6.5	1.5/15				
8				CMOS	28	8	61	128x8	4Kx8			6.5	1.5/15				
8	8	8	64K	CMOS	40/44	8	61	128x8				6.5	1.5/15				
8	8	8	64K	CMOS	40/44	8	61	128x8	4Kx8			6.5	1.5/15				
8	8	8	64K	CMOS	40/44	8	61	256x8				7.5	1.3/13.1				
8	8	8	64K	CMOS	40/44	8	61	256x8	4Kx8			7.5	1.3/13.1				
8	8	8	64K	CMOS	40/44	8	61	256x8	4Kx8	4Kx8		7.5	1.3/13.1				

8048

8			4K	CMOS		8-16		128				11					
8	8		4K	CHMOS	40	8	97	128x8	2Kx8			11	1.4/2.8				
8	8		4K	CHMOS	40	8/16	96	128x8	2Kx8			11	1.4/2.8				
8	8		4K	CMOS	40	8/16	97	64x8				11	1.4/2.8				
8	8		4K	CMOS	40	8/16	97	64x8	1Kx8			11	1.4/2.8				
8	8		4K	CMOS	40	8/16	97	128x8				11	1.4/2.8				

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
16 lines	1 16-bit				COP8642C	National	5
21 lines	2 16-bit	1 8-bit			COP884CFP	National	
23 lines	2 16-bit	1 8-bit			COP884CLP	National	
33 lines	2 16-bit	1 8-bit			COP888CFP	National	
33 lines	2 16-bit	1 8-bit			COP888CLP	National	
20 lines	1 16-bit				COP841C	National	10
16 lines	1 16-bit				COP842C	National	
33 lines	2 16-bit				COP888CF	National	
33 lines	2 16-bit				COP888CL	National	
33 lines	2 16-bit				COP888CLMH	National	
35 lines	3 16-bit				COP888CGP	National	15
35 lines	3 16-bit				COP888CG	National	
70 lines		10-bit		Read-time pulse unit, 2 8-bit PWM channels	μPD78P334	NEC	
70 lines		10-bit		Real-time pulse unit, 2 8-bit PWM channels	μPD78330	NEC	
70 lines		10-bit		Real-time pulse unit, 2 8-bit PWM channels	μPD78334	NEC	
					MC68HC711E9	Motorola	20
38 lines	16/8 bit	1 8-bit		Watchdog Timer	TMP68HC11A0	Toshiba	
38 lines	16/8 bit	1 8-bit		Watchdog Timer	TMP68HC11A1	Toshiba (3732)	
38 lines	16/8 bit	1 8-bit		Watchdog Timer	TMP68HC11A8	Toshiba (3732)	
38 lines	16/8 bit	1 8-bit		Watchdog Timer	TMP68HC11E0	Toshiba	
38 lines	16/8 bit	1 8-bit		Watchdog Timer	TMP68HC11E1	Toshiba (3732)	
38 lines	16/8 bit	1 8-bit		8-Bit Counter 38 I/O, Watchdog Timer	TMP68HC11E9	Toshiba (3732)	
					MC68HC05P8	Motorola	
24 lines	1 16-bit				MC68HC05A6	Motorola	
	1 13-bit				TMS70CT20	TI	25
	1 13-bit				TMS70CT40	TI	30
	1 13-bit			40 PDIP and 44 PLCC package	TMS70C00	TI	
	1 13-bit			40 PDIP and 44 PLCC package	TMS70C40	TI	
	3			UART, 40 PDIP and 44 PLCC package	TMS70C02	TI	
	3			UART, 40 PDIP and 44 PLCC package	TMS70C42	TI	
	3			UART, 40 PDIP and 44 PLCC package	SE77C42	TI	
					TMP80C39A	Toshiba	35
24 lines				Low power operation. Can be used with external RAM and ROM.	80C49	Intel	
27 lines	1 8-bit			Programmable ROM. Can be used with external RAM or ROM, Mil temperature.	M80C49	Intel	
24 lines	1 8-bit			CMOS version of MSM8035, low stand by power mode.	MSM80C35	OKI (3602)	
24 lines	1 8-bit			CMOS version of MSM8048, low stand by power mode.	MSM80C48	OKI (3602)	
24 lines	1 8-bit			CMOS version of MSM8039, low standby power mode.	MSM80C39	OKI (3602)	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers		
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other	
8048																	(Cont'd)	
8	8		4K	HMOS	40	8		256x8				11	1.4/2.8					
8	8		4K	HMOS	40	8	96	256x8	4Kx8			11	1.4/2.8					
8	8		4K	HMOS	40	8/16	96	64x8				8	1.9					
8	8		4K	HMOS	40	8/16	96	64x8				11	1					
8	8		4K	HMOS	40	8/16	96	64x8	1Kx8			8	1.4/2.8					
8	8		4K	HMOS	40	8/16	96	128x8				8	1.9					
8	8		4K	HMOS	40	8/16	96	128x8				11	1.4/2.8					
8	8		4K	HMOS	40	8/16	96	128x8	2Kx8			11	1.4/2.8					
8	8		4K	NMOS		8/16			2K			11						
8	8		4K	NMOS		8/16		64x8	1K			6						
8	8		4K	NMOS		8/16		256x8	4Kx8			11	1.4/2.8					
8	8		64K	NMOS	40	8/16	96	64x8	0)	0	12	1.36/2.72	1	0			
8	8		64K	NMOS	40	8/16	96	128x8	0	0	0	12	1.36/2.72	1	0			
8	8	8	4K	NMOS		8/16		256x8				11	1.36					
8	8	8	4K	NMOS		8/16		256x8	4Kx8			11	1.36					
8	8	8	4K	NMOS		8/16	96	64x8	1Kx8			11	1.36					
8	8	8	4K	NMOS	40	8/16		64x8		1.36		6						
8	8	8	4K	NMOS	40	8/16		128x8				11	1.36					
8	8	8	4K	NMOS	40	8/16		256x8				11	1.36					
8	8	8	4K	NMOS	40	8/16		256x8	4Kx8			11	1.36					
8	8	8	4K	NMOS	40	8/16	90	64x8	1Kx8			6	1.4/2.8					
8	8	8	4K	NMOS	40	8/16	90	128x8	2Kx8			11	1.4/2.8					
8	8	8	4K	NMOS	40	8/16	96	64x8				6	1.4/2.8					
8	8	8	4K	NMOS	40	8/16	96	64x8				11	1.36					
8	8	8	4K	NMOS	40	8/16	96	128x8				11	1.4/2.8					
8	8	8	4K	NMOS	40	8/16	96	256x8				11	1.4/2.8					
8	8	8	4K	XMOS		8/16		256				11						
8	8	8	4K	XMOS	40	8/16		128x8	2Kx8			11	1.36					
8	8	8	4K	XMOS	40	8/16		256x8				11	1.36					
8	8	8	4K	XMOS	40	8/16		256x8	4Kx8			11	1.36					
8	8	8	4K	XMOS	40	8/16	96	64x8	1Kx8			11	1.36					
8	8	8	4K	XMOS	40	8/16	96	128x8	2Kx8			11	1.36					
8	8	8	4K	XMOS	40	8/16	97	128x8				11	1.36					
8	8	8	4K	XMOS	40	8/16	97	128x8				11	1.36					
8051																		
8			64K	CMOS	40	8/24	255	128x8	4Kx8			20	0.6/2.4					
8			64K	CMOS	40	8/24	255	256x8	8Kx8			12	1/4					
8			64K	CMOS	40	8/24	255	256x8	8Kx8			16	0.75/3					
8			64K	CMOS	40	8/24	255	256x8	16Kx8			12	1/4					
8			64K	CMOS	68	8/24	111	256x8				16	.75/10					
8			64K	CMOS	68	8/24	111	256x8	8Kx8			16	.75/10					
8			64K	CMOS	84	8/24	111	256x8				12	1/10					
8			64K	CMOS	84	8/24	111	256x8	8Kx8			12	1/10					
8			64K	HMOS	40	8/24	111	128x8				12	1/4					
8			64K	NMOS	40	8,16,24	111	256x8	16Kx8			16	0.75/10					

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
24 lines	1 8-bit			Can be used with external RAM and ROM.	8040AHL	Intel	5
24 lines	1 8-bit			Can be used with external RAM and ROM.	8050AH	Intel	
24 lines	1 8-bit			CPU with power down mode. Can be used with external RAM or ROM.	M8035HL	Intel	
24 lines	1 8-bit			Can be used with external ROM and RAM.	8035AHL	Intel	
24 lines	1 8-bit			8048H-1 has 11 MHz clock. Can be used with external RAM and ROM.	8048AH	Intel	
24 lines	1 8-bit			CPU with power down mode. Can be used with external RAM or ROM.	M8039HL	Intel	
24 lines	1 8-bit			Can be used with external ROM and RAM.	8039AHL	Intel	
24 lines	1 8-bit			Can be used with external ROM and RAM.	8049AH	Intel	
24 lines	1 8-bit				TMP8049	Toshiba	
24 lines	1 8-bit			8748 has UV PROM	TMP8048	Toshiba	
					8050	Signetics	10
3	1				8035	Krueger	
3	1				8039	Krueger	
24 lines	1 8-bit			ROMless version of INS8050L.	INS8040L	National	
24 lines	1 8-bit				INS8050L	National	
24 lines	1 8-bit			Low power version of INS8048.	INS8048L	National	
24 lines	1 8-bit				TMP8035	Toshiba	
24 lines	1 8-bit				TMP8039	Toshiba	
24 lines	1 8-bit			ROMless INS8050UL	INS8040UL	National	
24 lines	1 8-bit			Microwire/Plus Serial Port	INS8050U	National	
24 lines	1 8-bit			Microwire/Plus Serial Port Low Power	INS8050UL	National	20
24 lines	1 8-bit				8048	Signetics	
24 LINES	1 8-BIT				8049	Signetics	
24 lines	1 8-bit				8035	Signetics	
				Lowpower version of INS8035.	INS8035L	National	
24 lines	1 8-bit				8039	Signetics	
24 lines	1 8-bit				8040	Signetics	
				Piggy-back microcomputer, emulates 8048/49/50, socket for program module and EPROM.	NS87P50	National	
				Low power version of INS8049.	INS8049L	National	
24 lines	1 8-bit			ROMless version of INS8050.	INS8040	National	
24 lines	1 8-bit				INS8050	National	30
					INS8048	National	
				Low Power standby mode, on-chip battery charging	INS8049	National	
24 lines	1 8-bit			ROMless version of INS8049.	INS8039	National	
24 lines	1 8-bit			Low power version of INS8039.	INS8039L	National	
				Available with EPROM (UV or OTP)	SC80C51	Signetics	40
				Pin compatible with 80C51; i ² C serial interface.	S83C652	Signetics	
				Pin compatible with 80C51, has third timer, 87C52 is EPROM version.	SC80C52	Signetics	
				Pin compatible with 80C51, i ² C serial interface, 16K ROM.	S83C654	Signetics (3634)	
				CMOS Version of the SAB80535	SAB80C535	Siemens	
48 lines				ROM Version of the SAB80535	SAB80C515	Siemens	
				SAB80C535 + Math Unit + Data Pointers + Serial Port and more.	SAB80C537	Siemens	
				ROM Version of the SAB80C537	SAB80C517	Siemens	
	2 16-bit			Serial I/O Port Boolean Processor.	8031AH	Intel	
				SAB80328 + 16K ROM	SAB80513	Siemens	
							45

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers		
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other	
8051																	(Cont'd)	
8			64K	NMOS	40	8,16,24	111	256x8	32Kx8			16	0.75/10					
8			64K	NMOS	68	8,16,24	111	256x8	16Kx8			12	1/10					
8	8		2K	CMOS	24	8/24	255	64x8	2Kx8			16	0.75/3					
8	8		2K	CMOS	28	8/24	255	64x8	2Kx8			16	0.75/3					
8	8		64K	NMOS	40	8/24	1/11	128x8	0	0	0	12	1/4	2	0			
8	8	16	64K	CMOS	40	8/24	111	256x8				20	.6/10					
8	8	16	64K	CMOS	64/68	8-24	255	128x8	4Kx8			16	0.75/3					
8	8	16	64K	CMOS	68	8/24	255	256x8	8Kx8			16	0.75/3					
8	8	16	64K	HMOS	40	8/24	111	128x8	4Kx8			12	4					
8	8	16	64K	NMOS	40	8/24	111	128x8	4Kx8			20	0.6/10	3	2			
8	8	16	64K	NMOS	40	8/24	111	256x8				18	0.7/10					
8	8	16	64K	NMOS	40	8/24	111	256x8	8Kx8			18	0.7/10					
8	8	16	64K	NMOS	40	8/24	255	128x8	4Kx8			15	0.8/3.2	3	2			
8	8	16	64K	NMOS	40	8/24	255	256x8	8Kx8			15	0.8/3.2	4	2			
8	8	16	64K	NMOS	68	8/24	111	256x8				15	0.8/10		2			
8	8	16	64K	NMOS	68	8/24	111	256x8	8Kx8			12	1/10					
8	8	16	65K	HMOS	40	8/24	111	256x8				12	1/4					
8X300																		
8			8K	TTL		16						8						
8			8K	TTL		16						10						
MB89700																		
8	8		128Kx8	CMOS	64	8	135	260x8	8Kx8			8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	260x8	8Kx8			8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8				8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8				8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8				8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8				8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8	16Kx8			8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8	16Kx8			8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8	16Kx8			8	0.5/6					
8	8		128Kx8	CMOS	64	8	135	516x8	16Kx8			8	0.5/6					
8X400																		
8				ECL	64	20	32					10						
TMS370																		
8				CMOS	28	8	73	128x8	4Kx8			20	1/12.6					
8				CMOS	28	8	73	128x8	4Kx8	256x8		20	1/12.6					
8				CMOS	28	8	73	128x8	4Kx8	256x8		20	1/12.6					
8			112K	CMOS	68	8	73	256x8		256x8		20	1/12.6					
8	8	8	112K	CMOS	68	8	73	256x8		256x8		20	1/12.6					
8	8	8	112K	CMOS	68	8	73	256x8	4Kx8			20	1/12.6					
8	8	8	112K	CMOS	68	8	73	256x8	4Kx8	256x8		20	1/12.6					
8	8	8	112K	CMOS	68	8	73	256x8	8Kx8			20	1/12.6					
8	8	8	112K	CMOS	68	8	73	256x8	8Kx8	256x8		20	1/12.6					

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				SAB8032B + 32K	SAB8352-5	Siemens	
				SAB80535 + 16K ROM	SAB83515-4	Siemens	
				80C51 Core architecture; EPROM version is 87C751; has I ² C serial interface.	S83C751	Signetics (3635)	
		1 8-bit		80C51 core architecture, PWM, EPROM version is 87C752.	S83C752	Signetics (3636)	
4	2				8031	Krueger	5
				CMOS Version of the SAB8032B	SAB80C32	Siemens	
				80C51 core architecture; has three additional 8-Bit Ports; EPROM version is 87C451	SC83C451	Signetics	
				80C51 core architecture, 10-Bit A/D, PWM, watch-dog timer, capture/compare, EPROM version is 87C552.	S83C552	Signetics	
	2 16-bit			Serial I/O Port Boolean Processor.	8051AH	Intel	
32 lines	2 16-bit			Serial I/O	SAB8051A	Siemens	10
	2 16-bit			Serial I/O	SAB8032B	Siemens	
	3 16-bit			Serial I/O	SAB8052B	Siemens	
	2 16-bit			NMOS version of 80C51	SCN8051	Signetics	
	3 16-bit			Pin compatible with 8051 with twice the ROM and RAM; third timer.	SCN8052	Signetics	
48 lines	3 16-bit	1 8-bit			SAB80535	Siemens	15
				ROM Version of the SAB80535	SAB80515	Siemens	
	3 16-bit	1 8-bit			8032	Intel	
					8X300	Signetics	
					8X305	Signetics	
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O, OTP	MB889P713	Fujitsu	20
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O and Masked ROM	MB889T713	Fujitsu	
				Piggyback Emulation Device for MB889T713/89715	MB889PV718	Fujitsu	
				Piggyback Emulation Device for MB889T765	MB889PV765	Fujitsu	
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O, ROM-less	MB889T715	Fujitsu	
		1 8-bit		UART, Serial I/O, PWM, U/D Counter, ROM-less	MB889T765	Fujitsu	25
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O, OTP	MB889P715	Fujitsu	
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O, Windowed EPROM	MB889W715	Fujitsu	
		1 8-bit		UART, Serial I/O, PWM, Real-Time I/O and Masked ROM	MB889T715	Fujitsu	
		1 8-bit		UART, Serial I/O, PWM, U/D Counter and Masked ROM	MB889T765	Fujitsu	
				35% faster than 8x305	8X401	Signetics	30
				Watchdog timer, PWM output, serial port	TMS370C310	TI	
				Watchdog timer, PWM output, serial port	TMS370C010	TI	
				4K prog. EEPROM, watchdog timer, PWM output, serial port	TMS370C810	TI	
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C150	TI	
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C250	TI	35
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C350	TI	
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C050	TI	
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C352	TI	
46 lines	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C052	TI	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers		
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other	
TMS370																		(Cont'd)
8	8	8	112K	CMOS	68	8	73	512x8				20	1/12.6					
8	8	8	112K	CMOS	68	8	73	512x8		512x8		20	1/12.6					
8	8	8	112K	CMOS	68	8	73	512x8	16Kx8			20	1/12.6					
8	8	8	112K	CMOS	68	8	73	512x8	16Kx8	512x8		20	1/12.6					
8	8	8	112K	CMOS	68	8	73	512x8	16Kx8	512X8		20	1/12.6					
TLCS90																		
8	8	8		CMOS	40		163	256x8				12.5	320ns	8	3			
8	8	8		CMOS	40		163	256x8	8Kx8			12.5	320ns	8	3			
8	8	8		CMOS	64		163					12.5	320ns	10	4			
8	8	8		CMOS	64		163	1Kx8				12.5	320ns	10	4			
8	8	8		CMOS	64		163	1Kx8	32Kx8			12.5	320ns	10	4			
8	8	8		CMOS	64		163	1Kx8	32Kx8			12.5	320ns	10	4			
8	8	8		CMOS	64		163	128x8				12.5	320ns	7	3			
8	8	8		CMOS	64		163	128x8	4Kx8			12.5	320ns	7	3			
8	8	8		CMOS	64		163	256x8				16	250ns	10	3			
8	8	8		CMOS	64		163	256x8	8Kx8			12.5	320ns	7	3			
8	8	8		CMOS	64		163	256x8	8Kx8			16	250ns	12	3			
8	8	8		CMOS	64		163	320x8	16Kx8			10	400ns	11	3			
8	8	8		CMOS	64		163	512x8	16Kx8			16	250NS	12	3			
8	8	8		CMOS	64		167	512x8	16KX8			10	400ns	10	4			
8	8	8		CMOS	64		167	512x8	16Kx8 EPROM			10	400ns	10	4			
Z80																		
8				CMOS	28	8/16	90	256x8				12						
8				CMOS	28	8/16	90	256x8	4Kx8			12						
8				CMOS	28	8/16	90	256x8	4Kx8			12						
μPD7800																		
8	16			CMOS	64		159	1K	32K			15	—/0.8	8	3			
8	16			CMOS	64		159	1K	32K			15	—/0.8	8	3			
μPD7810																		
8	8	16	64KB	CMOS	64	8/40	113	640	0			25	.160	4	5	128		
8	8	20	64KB Code 1MB Data	CMOS	64	8/40	65	1KB		32KB		12	.333	12	7	32		
8	8	20	64KB Code 1MB Data	CMOS	64	8/40	65	1KB	32KB			12	.333	12	7	32		
8	8	20	64KB Code 1MB Data	CMOS	64	8/40	65	1KB	32KB			12	.333	12	7	32		
8	8	20	64KB Code 1MB Data	CMOS	64	8/40	65	512 Bytes	16KB			12	.333	14	7	32		
8	8	20	64KB Code 1MB Data	CMOS	80/94	8/40	65	1KB				12	.333	12	7	32		
8	8	20	64KB 1MB Data	CMOS	64	8/40	65	512 Bytes	0			12	.333	14	7	32		
8	16	16	64KB	CMOS	64/68	8/40	109	512 Bytes	0			16	.25	11	4	128		

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C156 TI		
	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C256 TI		
	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C356 TI		
	3 16-bit	1 8-bit		UART, PWM output, serial port	TMS370C056 TI		
	3 16-bit			16K prog EPROM, UART, PWM output, serial port	TMS370C756 TI		5
32	8bitx4				TMP90C820A Toshiba		
32	8bitx4				TMP90P802A Toshiba		
28	8bitx4 16bitx1	8bit			TMP90C041 Toshiba		
28	8bitx1 16bitx1	8bit			TMP90C141 Toshiba		
54	8bitx4 16bitx1	8bit			TMP90CM40 Toshiba		10
54	8bit x4 16bitx1	8bit			TMP90PM40 Toshiba		
38	8bitx4				TMP90C401 Toshiba		
56	8bitx4				TMP90C400 Toshiba		
36	8bitx4 16bit1	8bit			TMP90C845 Toshiba		
56	8bit				TMP90P800 Toshiba		15
54	8bitx4 16bitx1	8bit			TMP90C844 Toshiba		
56	8bit			For VCR	TMP91C642 Toshiba		
36	8bitx4 16bitx1	8bit			TMP90PH44 Toshiba		
54	8bit x4 16bitx1	8bit			TMP91P640-10 Toshiba		
54	8bitx4 16bitx1	8bit			TMP91P640E-10 Toshiba		20
				1 ² C and NBAP Protocols	SCC84C00 Signetics		
				1 ² C and NBAP Protocols	SCC84C20 Signetics		
				1 ² C and NBAP Protocols	SCC84C40 Signetics		
40 lines	2 8-bit	1 8-bit		Two zero-cross detect inputs	μPD78CP18 NEC		
40 lines	2 8-bit	1 8-bit		Two zero-cross detect inputs	μPD78C18 NEC		25
6 Input 24 I/O	(3) 16-bit			16-bit Timer/Capture Unit (2) 8-bit PWM	μPD78350 NEC		
14 Input 12 Output 28 I/O	(3) 8-bit (1) 10-bit	8/8-bit		(2) 4-bit Real Time Output Ports	μPD78P218A NEC		
14 Input 12 Output 10 I/O	(3) 8-bit (1) 10-bit	8/8 bit		(2) 4-bit Real Time Output Ports	μPD78217A NEC		
14 Input 12 Output 28 I/O	(3) 8-bit (1) 10-bit	8/8-bit		(2) 4-bit Real Time Output Ports	μPD78218A NEC		
14 Input 12 Output 28 I/O	(3) 8-bit (1) 10-bit	8/8-bit		512 Bytes EEPROM (2) 4-bit Real Time Output Port	μPD78244 NEC		30
10 Input 12 Output 18 I/O	(3) 8-bit (1) 10-bit	8/8-bit	8/8-bit	(2) 4-bit Real Time Output Ports	μPD78237 NEC		
14 Input 12 Output 10 I/O	(3) 8-bit (1) 16-bit	8/8-bit	8/8-bit	512 Bytes EEPROM (2) 4-bit Real Time Output Port	μPD78243 NEC		
11 Input 23 I/O	(3) 10-bit	8/10-bit		Real Time Pulse Unit 8-bit Real Time OUTPUT Port 8-bit PWM	μPD78327 NEC		

Bold face indicates additional data is provided on the page noted.

MICROPROCESSORS—Microcontrollers (Cont'd)

Bus Width			Direct Addressing Range (bytes)	Process Technology	No. of Pins	Instruction Length Min/Max (bits)	No. of Basic Instructions	On-Chip Memory				Clock Rate (MHz)	Instruction Cycle Time, Min/Max (us)	No. of Interrupts		No. of Registers	
Ext. Data (bits)	Int. Data (bits)	Address (bits)						RAM	ROM	EPROM	Cache			Int.	Ext.	Gen. Purp.	Other
16 Bit																	
29000																	
16	16			CMOS	52	8/16		32x16				22.2					
16	16		User Def.	CMOS	52	8/16		32x16				12.7					
16	16		User Def.	CMOS	52	8/16		32x16				12.7					
16	16		User Def.	CMOS	52	8/16		32x16				15.4					
16	16		User Def.	CMOS	52	8/16		32x16				15.4					
16	16		User Def.	CMOS	52	8/16		32x16				15.4					
16	16		User Def.	CMOS	52	8/16		32x16				15.4					
16	16		User Def.	CMOS	52	8/16		32x16				22.2					
16	16		User Def.	CMOS	64	9	512					41	0.024/0.037				
68000																	
16	32	24	16M	HMOS	64	16/80	56					10				16	
RTX2000																	
16				CMOS	84							8	—/0.125				
16	16	20		CMOS	84	16	300					8	0.125/0.25			27	
16	16	20	1M	CMOS	84	16	300					8	0.125/0.25			26	
16	16	20	1M	CMOS	84	16	300					8	0.123/0.25			26	
16	16	20	1M	CMOS	84	16	300					10	0.1/0.2			26	
16	16	20	1M	CMOS	84	16	300					10	0.1/0.2			26	
16	16	20	1M	CMOS	84	16	300					10	0.1/0.2			27	
K-Series																	
16	8		64K	CMOS	64	8	96	256x8				12	0.5/8.3				
16	8		64K	CMOS	64	8	96	256x8	8Kx8			12	0.5/8.3				
16	8		64K	CMOS	64	8	96	256x8	8Kx8			12	0.5/8.3				
16	8		64K	CMOS	64	8	109	640x8				16	0.25/5.4				
16	8		64K	CMOS	64	8	109	640x8	16Kx8			16	0.25/5.4				
16	8		64K	CMOS	64	8	109	640x8	16Kx8			16	0.25/5.4				

I/O Ports No./Type	Peripherals (No./Resolution)			Comments	Device	Source	Line
	Timer/Counter	A/D Converter	D/A Converter				
				Microprogrammed ALU	CY7C9116-45C	Cypress	5
				Microprogrammed ALU	CY7C9117-79C	Cypress	
				Microprogrammed ALU	CY7C9117-79M	Cypress	
				Microprogrammed ALU	CY7C9116-65C	Cypress	
				Microprogrammed ALU	CY7C9116-65M	Cypress	
				Microprogrammed ALU	CY7C9117-35C	Cypress	
				Microprogrammed ALU	CY7C9117-65M	Cypress	
				Microprogrammed ALU	CY7C9117-45C	Cypress	
				Replaces four 2901s and carry look-ahead logic	CY7C9101-24C	Cypress	
				General purpose register machine, supports memory to memory operations	SCN68000	Signetics	10
					RTX2000/883	Harris	15
	3 16-bit			High Performance Microcontroller with 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2001A-8	Harris	
	3 16-bit			High Performance Microcontroller with multiplier, 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2000-8	Harris	
	3 16-bit			High Performance Microcontroller with 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2001-8	Harris	
	3 16-bit			High Performance Microcontroller with multiplier, 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2000-10	Harris	
	3 16-bit			High Performance Microcontroller, 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2001-10	Harris	
	3 16-bit			High Performance Microcontroller with 2 stacks, interrupt controller, all on chip. Quadbus Architecture	RTX2001A-10	Harris	
					μPD78310A	NEC	20
					μPD78P312A	NEC	
					μPD78312A	NEC	
					μPD78320	NEC	
					μPD78P322	NEC	
					μPD78322	NEC	

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
This section presents the major microprocessor system devices organized into system groups, ie 6800, 8080, 68000, etc. It includes those RAM's, ROM's and PROM's which are unique to a system. It omits most general purpose memories as they are listed in the Memory section. Similarly, buffers, line drivers, transceivers, UART's, etc. are covered briefly here as they are presented in depth in the Digital and Interface sections.				Bus Transceivers (See also Interface-Line Transceivers) (Cont'd)				Microprogram Sequencer, 4-Bit (Cont'd)			
Bit Slice				AM2947C AMD				SFC2909A SGS-Thomson			
Macrologic Bipolar				2948 Rochester				SFC2911 SGS-Thomson			
Buffer (16x4 First-in first-out memory. See also Memory-FIFO's)				SFC2915A SGS-Thomson				SFC2911A SGS-Thomson			
9403AC National				Clock Generator and Driver				Multiplier Accumulator, 16x16-Bit			
9403AM † National				AM2925M † AMD				CY7C510M °† Cypress			
N9403 Signetics				DMA Address Generator				Multiplier, 16x16-Bit			
CRC Generator/Checker (See also Interface-Error Checking Circuits)				AM2940C ° AMD				CY7C516C ° Cypress			
N9401 Signetics				AM2940M °† AMD				CY7C516M °† Cypress			
S9401 † Signetics				DMA Address Generator/Programmable Timer/Counter				CY7C517C ° Cypress			
Macrologic CMOS				AM2942C ° AMD				CY7C517M °† Cypress			
Programmable Bit Rate Generator				AM2942M °† AMD				Next Address Control Unit (use with 2911)			
HD4702-9 °† Harris				Dynamic Memory Controller				IDM29811C National			
Programmable Bit Rate Generator (See also Digital-CMOS-Miscellaneous-Bit Rate Generator)				AM2964B AMD				IDM29811M † National			
HD4702 ° Harris				AM2964BC AMD				Priority Encoder			
HD4702-2 °† Harris				AM2964BM † AMD				IDM29902C National			
HD4702/883 °† Harris				Error Correction and Detection Circuit, 16-Bit				IDM29902M † National			
2 Bit Slice				AM2960-1 ° AMD				Priority Interrupt Encoder, Vectored			
3000				AM2960C ° AMD				SFC2914 SGS-Thomson			
Central Processing Element				AM2960M °† AMD				RAM, 16-Word by 4-Bit			
N3002 Signetics				IDT39C60 ° IDT				AM29705A ° AMD			
S3002 † Signetics				IDT39C60-1 ° IDT				RAM (16x4) Two Outputs Ports			
Microprogram Control Unit				MC74F2960 Motorola				IDM29705AC National			
N3001 Signetics				Error Correction and Detection Circuit, 32-Bit				Quad D Flip-Flop with Two Output Ports			
S3001 † Signetics				IDT49C460 ° IDT				AM2919C AMD			
4 Bit Slice				IDT49C460A ° IDT				SFC2919 SGS-Thomson			
2900				IDT49C460B ° IDT				Quad D Register with Both Standard and Three-State Outputs (See also Digital-TTL-Flip-Flops)			
Microprocessor Slice				IDT49C460C ° IDT				AM2918C AMD			
MAS2901 GEC Plessey				Error Correction Multiple Bus Buffer, 4-Bit (datapath interface between AM2960, data bus, and RAM)				AM2918M † AMD			
Microprocessor Slice, 4-Bit				AM2904C AMD				SFC2918 SGS-Thomson			
AM29C01 AMD				AM2904M † AMD				Octal Memory Driver, Three-State			
Microprocessor, Four 2901's and a 2902 Look-Ahead Carry in one device				I/O Ports, 8-Bit Bidirectional				AM2966C ° AMD			
2901X4 IMI				AM2952A AMD				AM2966M °† AMD			
4x2901B IMI				IDT29FCT52AT IDT				Octal Register, Three-State			
Microprocessor, 4-Bit Slice, Cascadable				IDT29FCT52BT IDT				AM2954C AMD			
AM2903AC ° AMD				IDT29FCT52C IDT				8-Bit Bidirectional I/O Port			
AM2903AM °† AMD				IDT29FCT52CT IDT				29F52C ° National			
CY2901CM † Cypress				IDT29FCT53AT IDT				29F52M °† National			
CY7C901-32M °† Cypress				IDT29FCT53BT IDT				29F53C ° National			
CY7C901C ° Cypress				IDT29FCT53CT IDT				29F53M °† National			
CY7C901M °† Cypress				Look-Ahead Carry Generator				8-Bit Diagnostic Register with Serial Shadow Register			
IDT39C01C IDT				AM2902AC ° AMD				AM29818AC AMD			
2901-Cell LSI Logic				IDT39C02A IDT				16-Way Branch Control Unit (use with 2909)			
IDM2901A-2 National				IDM2902C National				IDM29803C National			
IDM2901AC National				IDM2902M † National				IDM29803M † National			
NCR2910-Cell NCR				SFC2902A SGS-Thomson				64-Bit (16x4) Edge-Triggered Register, Three-State			
SFC2901B SGS-Thomson				Memory Timing Controller with EDAC				IDM29903C National			
SFC2901C SGS-Thomson				MC74F2969 Motorola				8 Bit Slice			
SFC2903 SGS-Thomson				Memory Timing Controller without EDAC				EPIC			
2901-Cell SGS-Thomson				MC74F2970 Motorola				Microprocessor, CMOS			
2901-Cell Waferscale				Micro Sequencer (12-Bit)				GP001AD † Harris			
ALU (4-Bit slice)				H2910 Harris				Address Select Unit (Double)			
H2901 Harris				Microprogram Controller (25 MHz)				GP514AD † Harris			
Bus Transceivers (See also Interface-Line Transceivers)				AM29C10A-1 ° AMD				Bus Interface Unit			
AM2907M † AMD				Microprogram Sequencer, 4-Bit				GP516 Harris			
AM2917AM † AMD				AM2909AC AMD				Double Address Select Unit			
AM2946C AMD				CY2909AC Cypress				GP514 Harris			
(Continued)				CY2909AM † Cypress				Double Register Select Unit			
				CY2911AC Cypress				GP515 Harris			
				CY2911AM † Cypress				Emulating Controller			
				CY7C909-30C ° Cypress				GP501AD † Harris			
				CY7C909-30M °† Cypress				Interrupt Control and Timing Unit			
				CY7C909-40C ° Cypress				GP517 Harris			
				CY7C909-40M °† Cypress				GP517AD † Harris			
				CY7C911-30C ° Cypress				Level Shifter			
				CY7C911-30M °† Cypress				GP511AD † Harris			
				CY7C911-40C ° Cypress				Microprogram Sequencer (2910)			
				CY7C911-40M °† Cypress				GP502 Harris			
				IDM2909AC National							
				IDM2911AC National							
				SFC2909 SGS-Thomson							
				(Continued)							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8 Bit Slice				Microcomputer, Clock, RAM, ROM, I/O				Microcontroller (with ROM)			
EPIC (Cont'd)				(Cont'd)				(Cont'd)			
Multiplier (8x8-bit)				MB8855 Fujitsu				ETC9422 SGS-Thomson			
GP503AD ‡ Harris				MB8858 Fujitsu				ETC9444 SGS-Thomson			
Register Select Unit (Double)				COP200				ETC9445 SGS-Thomson			
GP515AD ‡ Harris				Microcontroller, RAM, ROM, I/O				ETL9410 SGS-Thomson			
ROM (512x16)				COP224C National				ETL9411 SGS-Thomson			
GP305AD ‡ Harris				COP225C National				ETL9413 SGS-Thomson			
ROM (4096 bit)				COP226C National				ETL9420 SGS-Thomson			
GP301AD ‡ Harris				COP244C National				ETL9421 SGS-Thomson			
GP302AD ‡ Harris				COP245C National				ET9413 SGS-Thomson			
16 Bit Slice				COP400				ET9420 SGS-Thomson			
2900				Microcontroller, Piggyback EPROM				ET9421 SGS-Thomson			
Microprocessor, 16-Bit Slice, Cascadable				COP402M National				ET9422 SGS-Thomson			
CY7C9101C ♦* Cypress				Microcontroller, Piggyback with EPROM Socket				Microcontroller (512x8 ROM, 32x4 RAM)			
CY7C9101M ♦* Cypress				COP420P National				COP314L National			
1 Bit				COP420R ♦ National				Converter (8-Bit A/D)			
14500				COP440R National				COP431 National			
Microprocessor, Industrial Control Unit				COP444CP National				COP432 National			
MC14500B Motorola				COP444LP National				COP434 National			
Latch, 8-Bit				COP444LR National				COP438 National			
MC14597BC Motorola				Microcontroller, RAM, ROM, I/O				LCD Display Controller			
MC14598BC Motorola				COP313C National				COP472-3 National			
MC14599BC Motorola				COP313CH National				Liquid Crystal Display Controller			
4 Bit				COP313L National				COP472 National			
1400				COP324C National				Vacuum Fluorescent Display Driver			
Microcomputer				COP325C National				COP370 National			
MN1400 Panasonic				COP326C National				COP470 National			
MN1402 Panasonic				COP342 National				51000			
MN1403 Panasonic				COP344C National				Microcomputer, RAM, ROM, I/O			
MN1404 Panasonic				COP345C National				KS51000 Samsung			
MN1405 Panasonic				COP413C National				KS51200 Samsung			
MN1430 Panasonic				COP413CH National				KS52000 Samsung			
MN1432 Panasonic				Microcontroller, ROMless				OLMS40			
MN1435 Panasonic				COP402 National				Microcomputer, I/O, Display Outputs, Timer			
MN1450 Panasonic				COP404 National				MSM58421 ♦ OKI			
MN1453 Panasonic				COP404C National				MSM58422 ♦ OKI (3600)			
MN1454 Panasonic				Microcontroller (with ROM)				Microcomputer, ROM, RAM, Timer/Counter, I/O			
MN1455 Panasonic				COP210C † National				MSM5842 ♦ OKI (3600)			
MN1458 Panasonic				COP211C † National				MSM5845 OKI			
Microcomputer, Evaluator				COP310C National				Microprocessor, Real-Time Clock Calendar			
MN1499 Panasonic				COP310L National				MSM5832 OKI (3600)			
MN1499A Panasonic				COP311C National				MSM58321 OKI (3600)			
1500				COP311L National				L5832 SGS-Thomson			
Microcomputer				COP320 National				Column Data Register for LCD			
MN1541 Panasonic				COP320L National				MSM5839 OKI (3605)			
MN1542 Panasonic				COP321 National				LCD Driver, 5-Digit			
MN1544 Panasonic				COP321L National				MSM58292 ♦ OKI (3605)			
MN1562 Panasonic				COP322 National				LED Driver, 4-Digit			
MN1564 Panasonic				COP322L National				MSM58282 OKI			
Microcomputer, Evaluator				COP340 † National				Row Scanning Controller for LCD DOT Matrix Driver			
MN1599 Panasonic				COP341 † National				MSM5838 OKI			
I/O Expander				COP344L ♦ National				88200			
MN1591 Panasonic				COP345L ♦ National				Microcomputer, Clock, RAM, ROM, I/O			
2100				COP410C ♦ National				MB88200 Fujitsu			
Program Development Device				COP410L ♦ National				MB88201H Fujitsu			
SE2400P TI				COP411C ♦ National				MB88202 Fujitsu			
8840 / 50				COP411L ♦ National				MB88205 Fujitsu			
Microcomputer, Clock, RAM, ROM, I/O				COP414L ♦ National				88500			
MB8851 Fujitsu				COP420 ♦ National				Microcomputer, Clock, RAM, ROM, I/O			
MB8851A Fujitsu				COP420L ♦ National				MB88501 Fujitsu			
MB8851L Fujitsu				COP421 ♦ National				MB88503 Fujitsu			
MB8853 Fujitsu				COP421L ♦ National				MB88535 Fujitsu			
MB8854A Fujitsu				COP422 National				MB88536 Fujitsu			
MB8854L Fujitsu				COP422L ♦ National				MB88541 Fujitsu			
(Continued)				COP440 National				(Continued)			
				COP441 National							
				COP442 National							
				COP444L ♦ National							
				COP445L ♦ National							
				ETC9410 SGS-Thomson							
				ETC9411 SGS-Thomson							
				ETC9420 SGS-Thomson							
				ETC9421 SGS-Thomson							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

• Behavioral Model Available

♦ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
SM Series				Microcomputer (single-chip, 4K ROM)				Microcomputer, 4K ROM, LCD Drivers, Dual Clock			
Microcomputer				(Cont'd)				TMP47C425A Toshiba (3728)			
SM590 Sharp				HMCS414CL Hitachi				TMS2000			
SM591 Sharp				HMCS46C Hitachi				ROMless TMS2000 Family Evaluator			
Microcomputer, Expandable for External RAM/ROM				HMCS46CL Hitachi				SE2100P TI			
SM520 Sharp				HMCS47C Hitachi				SE2400P TI			
Microcomputer, Multi-LCD Display, On-Chip LCD Driver				Microcomputer (single-chip, 4K ROM, LCD driver)				μCOM-75			
SM510 Sharp				LCD-IV Hitachi				Microcomputer			
Microcomputer, On-Chip LCD Driver				Microcomputer (single-chip, 4K ROM, 256x4 RAM)				μCOM-75 NEC			
SM5A Sharp				HMCS424 Hitachi				Microcomputer, General Purpose Driver			
SM500 Sharp				Microcomputer (single-chip, 8K ROM)				μPD7507 NEC			
SM531 Sharp				HMCS408AC Hitachi				μPD7508 NEC			
Microcomputer, On-Chip LCD Driver, Expandable for External RAM				HMCS408C Hitachi				μPD7508A NEC			
SM4A Sharp				Microcomputer (single-chip, 2K ROM)				μPD75106 NEC			
Microcomputer, On-Chip Melody Generator and LCD Driver				HMCS412CL Hitachi				μPD75206 NEC			
SM511 Sharp				Microcomputer, 1K ROM, Zero Cross Detector				μPD75308 NEC			
SM530 Sharp				TMP42C66 Toshiba				Microcomputer, LCD Driver			
Microcomputer, Serial Input/Output				Microcomputer, 1K ROM, 11 I/O Lines				μPD7501 NEC			
SM550 Sharp				TMP42C60 Toshiba				μPD7502 NEC			
SM551 Sharp				TMP4260 Toshiba				μPD7503 NEC			
SM552 Sharp				Microcomputer, 1K ROM, 23 I/O Lines				Microcomputer, Vacuum Fluorescent Driver			
				TMP42C70 Toshiba				μPD7508A NEC			
				TMP4270 Toshiba				μPD7517 NEC			
TLCS470				Microcomputer, 2K ROM				Miscellaneous			
Microcomputer (LCD, Timer/Counter, 36 I/O, E²PROM, dual clock)				TMP47C200 Toshiba (3728)				Microcomputer, 4-Bit (12K ROM)			
TMP47E820 Toshiba				Microcomputer, 2K ROM, DTMF				LC66512B Sanyo			
Microcomputer (OTP, LED driver, 36 I/O, dual clock)				TMP47C25 Toshiba				Microcomputer, 4-Bit (16K ROM)			
TMP47P800 Toshiba (3729)				TMP47C26 Toshiba				LC66516B Sanyo			
Microcomputer (OTP, VFT, D/A, A/D, 53 I/O, dual clock)				Microcomputer, 2K ROM, LED Drive				Microcomputer, 4-Bit (6K ROM)			
TMP47P860 Toshiba				TMP4720 Toshiba				LC66506B Sanyo			
TMP47P870 Toshiba				Microcomputer, 2K ROM, PWM				Microcomputer, 4-Bit (8K ROM)			
Microcontroller, 4-Bit (DTMF generator, LCD driver)				TMP47C231A Toshiba (3728)				LC66508B Sanyo			
TMP47C858 Toshiba (3729)				TMP47C232 Toshiba (3728)				8 Bit			
Microcontroller, 4-Bit (LED driver, 8-Bit A/D)				Microcomputer, 2K ROM, VFT Drivers				Microcontroller, RAM, ROM, I/O			
TMP47C1260 Toshiba (3729)				TMP47C210A Toshiba (3728)				COP820 National			
TMP47C1660 Toshiba (3729)				Microcomputer, 4K ROM				COP821 National			
Microcontroller, 4-Bit (VFT driver, D/A, 12Kx8 ROM, 768x4 RAM)				TMP47C400 Toshiba (3728)				COP822 National			
TMP47C1270 Toshiba (3729)				Microcomputer, 4K ROM, A/D, Watchdog Timer				COP824 National			
Microcontroller, 4-Bit (16Kx8 ROM, VFT driver, 768x4 RAM)				TMP47C400A Toshiba (3728)				COP840 National			
TMP47C1670 Toshiba (3729)				Microcomputer, 4K ROM, A/D, Watchdog Timer, VFT Driver				COP841 National			
Microcontroller, 4-Bit (4Kx8 ROM, 256x4 RAM)				TMP47C441A Toshiba (3728)				Programmable Communication Interface (See also Interface Transmitters-Receivers)			
TMP47C434 Toshiba (3729)				Microcomputer, 4K ROM, I/O				INS8250 National			
Microcontroller, 4-Bit (6144x8 ROM, 384x4 RAM)				TMP47C460A Toshiba (3728)				RAM (128x8) and I/O			
TMP47C634 Toshiba (3729)				Microcomputer, 4K ROM, LED Drive				INS8154 National			
TMP47C635 Toshiba (3729)				TMP4740 Toshiba				4-Bit Latch			
Microcontroller, 4-Bit (8-Bit A/D, LED driver, 6144x8 ROM, 384x4 RAM)				TMP4746 Toshiba				DM74LS175 National			
TMP47C662 Toshiba (3729)				Microcomputer, 4K ROM, PWM				8-Bit I/O Port			
Microcontroller, 4-Bit (8-Bit A/D, 8Kx8 ROM, 512x4 RAM)				TMP47C432 Toshiba (3728)				DP8212 National			
TMP47C862 Toshiba (3729)				Microcomputer, 4K ROM, RAM, DTMF				INS8212 National			
Microcontroller, 4-Bit (8Kx8 ROM, 512x4 RAM)				TMP47C451A Toshiba (3728)				740			
TMP47C850 Toshiba (3729)				TMP47C452A Toshiba (3728)				Microprocessor, External ROM			
TLCS47				Microcomputer, 4K ROM, VFT Drivers				M50734 Mitsubishi			
Microcomputer (single-chip, 2K ROM)				TMP47C410A Toshiba (3728)				Microprocessor, Piggy-Back for M50740/M50741			
HMCS402C Hitachi				Microcomputer, 6K ROM, A/D, Watchdog Timer				M50740-PGYS Mitsubishi			
HMCS402CL Hitachi				TMP47C660 Toshiba (3729)				Microprocessor, Piggy-Back for M50742			
HMCS412AC Hitachi				Microcomputer, 6K ROM, VFT Drivers, Watchdog Timer				M50742-PGYS Mitsubishi			
HMCS412C Hitachi				TMP47C670 Toshiba (3729)				Microprocessor, Piggy-Back for M50743			
HMCS44C Hitachi				Microcomputer, 8K ROM, A/D, Watchdog Timer				M50743-PGYS Mitsubishi			
HMCS44CL Hitachi				TMP47C860 Toshiba (3729)				Microprocessor, Piggy-Back for M50745			
HMCS45C Hitachi				Microcomputer, 8K ROM, VFT Drivers, Watchdog Timer				M50745-PGYS Mitsubishi			
HMCS45CL Hitachi				TMP47C870 Toshiba (3729)				Microprocessor, Piggy-Back for M50753			
Microcomputer (single-chip, 2K ROM, LCD driver)				Microcomputer, 8K ROM, Watchdog Timer				M50753-PGYS Mitsubishi			
LCD-III Hitachi				TMP47C800 Toshiba (3729)				Microprocessor, Piggy-Back for M50757/M50752			
Microcomputer (single-chip, 4K ROM)				Microcomputer, 512 byte ROM, 11 I/O Lines				M50752-PGYS Mitsubishi			
HMCS404AC Hitachi				TMP42C40 Toshiba				Microprocessor, RAM, External ROM			
HMCS404C Hitachi				TMP4240 Toshiba				M50740ASP Mitsubishi			
HMCS404CL Hitachi				Microcomputer, 512 byte ROM, 23 I/O Lines							
HMCS414AC Hitachi				TMP42C50 Toshiba							
HMCS414C Hitachi				TMP4250 Toshiba							
(Continued)											

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line					
740 (Cont'd)				RAM (64x8) (See also Memory-RAM's)				8-Bit Input/Output Port								
Microprocessor, RAM, ROM	M50740	Mitsubishi	5	CDP1826C	Harris	55	115	CDP1852	† Harris	120	115					
	M50740A	Mitsubishi		RAM (128x8) (See also Memory-RAM's)				CDP1872	† Harris							
	M50741	Mitsubishi		CDP1823	† Harris			CDP1872C	† Harris							
	M50742	Mitsubishi		CDP1823C	† Harris			CDP1874C	† Harris							
	M50743	Mitsubishi		RAM (256x4) (See also Memory-RAM's)				CDP1875C	† Harris							
	M50745	Mitsubishi		CDP1822	† Harris	60		120	HB1852			† Hughes				
	M50747	Mitsubishi		CDP1822C	† Harris				HB1852C			† Hughes				
	M50752	Mitsubishi		HB1822C	† Hughes				HC1852			◊ Hughes				
	M50753	Mitsubishi		HC1822C	Hughes				HC1852C			◊ Hughes				
	M50754	Mitsubishi		Real-Time Clock (time and calendar information in BCD format from seconds to months)					2650							
	M50757	Mitsubishi		CDP1879	† Harris				Advanced Video Display Controller							
Microcontroller, 8K ROM, RAM				CDP1879C-1	† Harris				SCN2674			◊ Signetics				
M50932	Mitsubishi	10	65	ROM (512x8) (See also Memory-ROM's)		70		125	Asynchronous Communications Interface							
M50943	Mitsubishi			CDP1832	† Harris				SCN2641			◊ Signetics				
1650				CDP1832C	† Harris				Display Character and Graphics Generator							
Microcomputer	PIC16C54	Microchip		HB1831	† Hughes				SC2670AC3			Signetics				
	PIC16C55	Microchip		HB1831C	† Hughes				SC2670BC3			Signetics				
	PIC16C56	Microchip		HB1832	† Hughes				Programmable Communication Interface							
	PIC16C57	Microchip		HB1832C	† Hughes		2651		Micro-C	130	130					
	PIC1652	Microchip		HC1831	◊ Hughes		2661		Micro-C							
	PIC1654	Microchip		HC1831C	◊ Hughes		2661-1		Micro-C							
	PIC1670	Microchip		HC1832	◊ Hughes		SCN2651C		Signetics							
				HC1832C	◊ Hughes		SCN2661A		◊ Signetics							
				ROM (1024x8) (See also Memory-ROM's)					SCN2661B			◊ Signetics				
				CDP1833	† Harris		COM2661		SMC							
				CDP1833C	† Harris	75	135	Programmable Video Timing Controller								
	1800				CDP1834			† Harris	SCN2672A			◊ Signetics				
Microcomputer, RAM, ROM, Counter/Timer	CDP1804AC	† Harris		CDP1834C	† Harris			Dual Universal Asynchronous Receiver/Transmitter								
	Microprocessor			HB1833	† Hughes			SCN2681T	◊ Signetics							
	CDP1802A	† Harris		HB1833C	† Hughes			80	140			Quad Transceivers (See also Interface-Line Transceivers)				
	CDP1802AC	† Harris		HB1834	† Hughes	MC8T26A	Motorola									
	CDP1802BC	† Harris		HB1834C	† Hughes	MC8T28	Motorola									
	HB1802A	† Hughes		HC1833	◊ Hughes	DS8T26A	National									
	HB1802AC	† Hughes		HC1833C	◊ Hughes	DS8T28	National									
	HC1802A	◊ Hughes		HC1834	◊ Hughes	Hex Buffers/Inverters (See also Digital-TTL Buffers/Inverters 8T95, 8T96, 8T97, 8T98)										
	HC1802AC	Hughes		HC1834C	◊ Hughes	MC8T95	Motorola									
	Microprocessor, Counter/Timer			ROM (2048x8) (See also memory-ROMs)						MC8T96	Motorola					
	CDP1806AC	† Harris		CDP1835C	† Harris	MC8T97	Motorola									
	Microprocessor, RAM, Counter/Timer			CDP1837C	† Harris	MC8T98	Motorola									
	CDP1805AC	† Harris		HB1835	† Hughes	N8T95	Signetics									
Keyboard Encoder				HB1835C	† Hughes	90	145	N8T96	Signetics							
Latch/Decoder Memory Interface	CDP1871A	Harris		30	35			HC1835	◊ Hughes	N8T97	Signetics					
	CDP1871AC	Harris	HC1835C					◊ Hughes	N8T98	Signetics						
	CDP1881	Harris	UART					S8T95	† Signetics							
	CDP1881C	Harris	CDP1854A					† Harris	S8T97	† Signetics						
	CDP1882	Harris	CDP1854AC					† Harris	S8T98	† Signetics						
	CDP1882C	Harris	CDP65C51-1					Harris	3870							
	CDP1883	Harris	CDP6853					Harris	Microcomputer, Piggyback EPROM, Emulates all MK3870 Devices							
	Multiply-Divide Circuit							Dual Counter/Timer (two 16-Bit programmable down counters independently controlled by separate control registers)				MK38P70/02	SGS-Thomson			
	CDP1855	† Harris	CDP1878			† Harris	100	155	Microcomputer, ROM, PLL, Shadow RAM, I/O, A/D							
	CDP1855C	† Harris	CDP1878C			† Harris			M8910	SGS-Thomson						
N-Bit Decoder (for I/O interface)						4-Bit Buffer/Separator (for memory interface)				Microcomputer, ROM, 64-Byte Executable RAM, 64-Byte Scratchpad RAM, Timer, I/O						
CDP1853	† Harris	40	45	HB1856	† Hughes	MK2870			SGS-Thomson							
CDP1853C	† Harris			HB1856C	† Hughes	MK38P70			SGS-Thomson							
HB1853	† Hughes			HC1856	Hughes	MK3870/10			SGS-Thomson							
HB1853C	† Hughes			HC1856C	Hughes	MK3870/12			SGS-Thomson							
HC1853	◊ Hughes			4-Bit Bus Buffer/Separator (for I/O interface)					MK3870/20	SGS-Thomson						
HC1853C	◊ Hughes			HB1857	† Hughes	MK3870/22	SGS-Thomson									
Programmable I/O Interface				HB1857C	† Hughes	MK3870/30	SGS-Thomson									
CDP1851	† Harris			50	105	110	HB1858	† Hughes	MK3870/32	SGS-Thomson						
CDP1851C	† Harris						HB1858C	† Hughes	MK3870/40	SGS-Thomson						
Programmable Interrupt Controller							HC1858	Hughes	MK3870/42	SGS-Thomson						
CDP1877	Harris	HC1858C	Hughes				M2870	SGS-Thomson								
CDP1877C	Harris	4-Bit Latch with 1 of 4 Decoder					M2872	SGS-Thomson								
RAM (32x8) (See also Memory-RAM's)	CDP1824	† Harris	HB1859				† Hughes	M2876	SGS-Thomson							
	CDP1824C	† Harris	HB1859C				† Hughes	M38ADP70	◊ SGS-Thomson							
	HB1824	† Hughes	HC1859				Hughes	M38P74	SGS-Thomson							
	HC1824	◊ Hughes	HC1859C				Hughes	M38P78	SGS-Thomson							
	HC1824C	◊ Hughes	7-Bit Latch with Decoder for 8Kx8 Memories				M38SB72	◊ SGS-Thomson								
			CDP1883C	Harris	(Continued)											

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
3870 (Cont'd)				Microcomputer (8K ROM, 256 byte RAM, 31 I/O, 8K memory expansion, 1 MHz)				Microprocessor, 7-Bit (bidirectional I/O, IRQ, RDY)			
Microcomputer, ROM, 64-Byte Executable RAM, 64-Byte Scratchpad RAM, Timer, I/O				HD6305Y1 Hitachi				8501 Commodore			
(Cont'd)				Microcomputer (8K ROM, 256 byte RAM, 55 I/O, 1 MHz)				Microprocessor, 7-Bit (bidirectional I/O, IRQ, RDY, NMI)			
M38SH72 ♦ SGS-Thomson				HD6305Y0 Hitachi				8502 Commodore			
M3870 ♦ SGS-Thomson				Microcomputer (16K EPROM, 256 byte RAM, 53 I/O, 1.5 MHz)				Microprocessor, 8-Bit			
M3872 ♦ SGS-Thomson				HD637A01YOC Hitachi				UM6502E UMC			
M3875 ♦ SGS-Thomson				Microcomputer (16K EPROM, 256 byte RAM, 53 I/O, 2 MHz)				UM6512 UMC			
M3876 ♦ SGS-Thomson				Microcomputer (16K ROM, 256 byte RAM, 53 I/O, 1 MHz)				Asynchronous Communications Interface Adapter			
M3878 SGS-Thomson				HD637B01YOC Hitachi				G65SC51 ♦ CMD Micro			
6000				Microcomputer (16K ROM, 256 byte RAM, 53 I/O, 1 MHz)				6551 Commodore			
Microcomputer, Piggyback EPROM, emulate S6010, S6011, S6012				HD6301Y0 Hitachi				MD65SC51B Mitel			
S60P12 SGS-Thomson				Microcomputer (16K ROM, 256 byte RAM, 53 I/O, 2 MHz)				R65C51 Rockwell			
Microcomputer, ROM, 64 Byte RAM, A/D, I/O, Timer				HD63B01Y0 Hitachi				R6551 Rockwell			
S6010 ♦ SGS-Thomson				Microcomputer (4K ROM, 128 byte RAM, 31 I/O, 12K memory expansion, 1 MHz)				Communications, Dual Asynchronous Communications Interface Adapter (DACIA)			
S6011 ♦ SGS-Thomson				HD6305X1 Hitachi				R65C52 * Rockwell			
Microcomputer, ROM, 64 Byte RAM, A/D, I/O, Timer, Watchdog Timer				Microcomputer (4K ROM, 192 byte RAM, 31 I/O, 1 MHz)				CRT Controller 6545-1 Commodore			
S6012 ♦ SGS-Thomson				HD6305V0 Hitachi				Dot-Matrix Printer Controller			
Microcomputer, ROM, 64 Byte RAM, A/D, LCD drivers, 2 Timer, I/O				Microcomputer (4K ROM, 192 byte RAM, 53 I/O, 2 MHz)				R6592 Rockwell			
S6040 ♦ SGS-Thomson				6500				Emulator Device			
Microcomputer, ROMless emulate S6040				Microcomputer				R6500/1E Rockwell			
S60R40 ♦ SGS-Thomson				6500/1 Commodore				Mini-Floppy Disk Controller			
6300				NCR6500/1 NCR				MB8876A Fujitsu			
Microcomputer (single-chip, 4K ROM, 128 byte RAM, 29 I/O, 1.5 MHz)				W65C134 WDC (3754)				MB8877A Fujitsu			
HD63A01V1 Hitachi				Microcomputer, 8-Bit				Peripheral Interface Adapter			
HD6301V1 Hitachi				R65F11 Rockwell				G65SC21 ♦ CMD Micro			
Microcomputer (2K EPROM, 128 byte RAM, 31 I/O, 1 MHz)				R65F12 Rockwell				G65SC22 CMD Micro			
HD63705V0C Hitachi				Microprocessor				6522 Commodore			
Microcomputer (2K EPROM, 128 byte RAM, 31 I/O, 1.5 MHz)				G65SC02 ♦ CMD Micro				6526 Commodore			
HD637A05V0C Hitachi				G65SC102 ♦ CMD Micro				NCR65C21 NCR			
Microcomputer (2K EPROM, 128 byte RAM, 31 I/O, 2 MHz)				G65SC112 ♦ CMD Micro				NCR65C22 NCR			
HD637B05V0C Hitachi				G65SC12 ♦ CMD Micro				R65C21 Rockwell			
Microcomputer (2K ROM, 128 byte RAM, 31 I/O, 1 MHz)				65CE02 Commodore				R65C22 Rockwell			
HD6305U0 Hitachi				6502 Commodore				R6520 Rockwell			
Microcomputer (4K EPROM)				6503 Commodore				R6522 Rockwell			
HD63P01M1 Hitachi				6504 Commodore				W65C22 ♦ WDC (3754)			
Microcomputer (4K EPROM, 1 MHz)				6505 Commodore				W65C29 WDC (3754)			
HD63P05Y0 Hitachi				6506 Commodore				W65C90 WDC (3754)			
HD63P05Y1 Hitachi				6507 Commodore				Peripheral Interface Adapter/Timer			
Microcomputer (4K EPROM, 1.5 MHz)				6512 Commodore				R65C24 Rockwell			
HD63PA05Y0 Hitachi				6513 Commodore				RAM, ROM, I/O and Interval Timer			
HD63PA05Y1 Hitachi				6514 Commodore				6530 Commodore			
Microcomputer (4K EPROM, 128 byte RAM, 29 I/O, 1 MHz)				6515 Commodore				R6530 Rockwell			
HD63701V0C Hitachi				NCR65CX02-Cell NCR				RAM(128x8), I/O, and Timer			
Microcomputer (4K EPROM, 128 byte RAM, 29 I/O, 1.5 MHz)				NCR65C02 NCR				G65SC32 CMD Micro			
HD637A01V0C Hitachi				6502-Cell NCR				6532 Commodore			
Microcomputer (4K EPROM, 128 byte RAM, 29 I/O, 2 MHz)				RP65C02 Ricoh				UM6532 UMC			
HD637B01V0C Hitachi				RP65C02A Ricoh				UM6532A UMC			
Microcomputer (4K EPROM, 192 byte RAM, 53 I/O, 1 MHz)				R6500 Rockwell				RAM(128x8), ROM, I/O, and Counter/Timer			
HD63701X0C Hitachi				R6501Q Rockwell				R6531 Rockwell			
Microcomputer (4K EPROM, 192 byte RAM, 53 I/O, 1.5 MHz)				R6502 Rockwell				Sound Interface Device			
HD637B01X0C Hitachi				R6511Q Rockwell				6582 Commodore			
Microcomputer (4K EPROM, 2 MHz)				L6506 SGS-Thomson				Tri-Port Interface			
HD63PB05Y0 Hitachi				VL65NC02 VLSI Tech				6525 Commodore			
HD63PB05Y1 Hitachi				W65C02 ♦ WDC (3754)				Single Port Interface			
Microcomputer (4K ROM, 128 byte RAM, 29 I/O, 2 MHz)				Microprocessor, Clock, RAM, I/O				6529 Commodore			
HD63B01V1 Hitachi				NCR6500/11 NCR				8-Bit Microprocessor			
Microcomputer (4K ROM, 192 byte RAM, 53 I/O, 1 MHz)				R6500/11 Rockwell				UM6507 UMC			
HD6301X0 Hitachi				R6500/12 Rockwell				6800			
Microcomputer (4K ROM, 96 byte RAM, 20 I/O, 0.125 MHz)				R6500/13 Rockwell				Microcomputer			
HD63L05F1 Hitachi				R6500/15 Rockwell				MC68HC11F1 Motorola			
Microcomputer (4K ROM, 128 byte RAM, 55 I/O, 1 MHz)				Microprocessor, Communications				MC6801 Motorola			
HD6305X0 Hitachi				G65SC150 CMD Micro				MC6801-1 Motorola			
				G65SC151 CMD Micro				MC6801C Motorola			
				Microprocessor, I/O				MC6801U4 Motorola			
				6510 Commodore				EF6801 SGS-Thomson			
				Microprocessor, RAM, I/O				EF6805P2 SGS-Thomson			
				6508 Commodore				EF6805P4 SGS-Thomson			
				Microprocessor with Memory Management				EF6805P6 SGS-Thomson			
				6509 Commodore				EF6805U2 SGS-Thomson			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
6800		(Cont'd)		Microprocessor				Asynchronous Communications Interface Adapter (ACIA) (Cont'd)			
Microcomputer, A/D Converter, Serial Peripheral Interface, Three Timers				68A00	Micro-C			6850	Micro-C		
MC6805S2	Motorola			68B00	Micro-C			MC6850	Motorola		100
MC6805S3	Motorola			MC6800	Motorola			EF68A50	SGS-Thomson		
				NCR68C05	◊ NCR			EF68B50	SGS-Thomson		
				EF6805R2	SGS-Thomson			EF6850	SGS-Thomson		
Microcomputer, Clock, Timer, RAM, ROM, I/O			5	Microprocessor (CMOS), RAM, Timer, I/O				Clock Generator			
MC6804J1	Motorola			CDP6805E3	Harris			8701	Commodore		
MC6804J2	Motorola			Microprocessor (external clock)			55	Clock Generator, 2-Phase			
MC6804P2	Motorola			MC6809E	◊ Motorola			MC6870	Motorola		
EF68HC04P3	SGS-Thomson			EF68A09E	SGS-Thomson			Clock (real time) Plus RAM			
EF6804J2	SGS-Thomson			EF68B09E	SGS-Thomson			CDP6818	Harris		105
EF6804P2	SGS-Thomson			EF6809E	SGS-Thomson			146818	◊ Krueger (3548)		
Microcomputer Emulator, 8-Bit (piggyback device)			10	Microprocessor (internal clock)				146818	Micro-C		
CDP68EM05C4	Harris			HD68B09	Hitachi			MC146818A	◊ Motorola		
CDP68EM05D2	Harris			HD6809	Hitachi			CRT Controller			
Microcomputer (EPROM)				MC68A09	Micro-C		60	HD68A45	Hitachi		110
68704-2	Micro-C			68B09	Micro-C			HD68B45	Hitachi		
68705-3	Micro-C			MC6809	◊ Motorola			HD6845	Hitachi		
MC68705P5	Motorola			EF68A09	SGS-Thomson			68B45	Micro-C		
MC68705R3	Motorola			EF68B09	SGS-Thomson		65	UM6845	UMC		
Microcomputer, (EPROM), ROM, Clock, Timer, A/D, I/O				EF6809	SGS-Thomson			UM6845E	UMC		115
68705-3	Micro-C		15	Microprocessor (internal clock, 128x8 RAM)				UM6845R	UMC		
MC68705R3	Motorola			68A00	Micro-C			CRT Controller, Character and Screen Programmable, Cursor, Light Pen Detection			
Microcomputer (external ROM)				68B02	Micro-C			MB89321	Fujitsu		
68A03	Micro-C			MC6802	Motorola			DMA Controller			
68B03	Micro-C			EF68A02	SGS-Thomson			HD68A44	Hitachi		
MC6803	Motorola			EF68B02	SGS-Thomson			HD68B44	Hitachi		
MC6803U4	Motorola			EF6802	SGS-Thomson			HD6844	Hitachi		
EF68A03	SGS-Thomson		20	Microcontroller, 8-Bit (176 bytes RAM, 7744 bytes ROM)				68A44	Micro-C		120
EF68B03	SGS-Thomson			CDP68HC05C8	Harris			68B44	Micro-C		
EF6803	SGS-Thomson			Microcontroller, 8-Bit (15K ROM, 352 bytes RAM)				Floppy Disk Controller			
EF6803U4	SGS-Thomson			MC68HC05C9	Motorola			1797	Micro-C		
Microcomputer, RAM, EEPROM, Timer, I/O				Microcontroller, 8-Bit (2K ROM, 128 bytes RAM)				1797-02-16	Micro-C		
MC68HC11A1	Motorola		25	MC68HC05P1	Motorola			FDC1793	SMC		
Microcomputer, RAM, ROM, Clock, Timer, A/D, I/O				Microcontroller, 8-Bit (2K ROM, 128 bytes RAM, 16-Bit timer, watchdog)			75	FDC1793-02	◊ SMC		125
MC6805R2	Motorola			MC68HC05P7	Motorola			FDC1797	SMC		
Microcomputer, RAM, ROM, EEPROM, Timer, I/O				Microcontroller, 8-Bit (32K ROM, 1K RAM, A/D, three 16-Bit timers)				FDC1797-02	◊ SMC		
MC68HC11E9	Motorola			HD6475328	Hitachi			FD1793-02	Western		
MC68HC811E2	Motorola			Microcontroller, 8-Bit (4K ROM, 128 bytes RAM)				FD1797-02	Western		
Microcomputer, RAM, ROM, I/O				MC68HC05M4	Motorola			General Purpose Interface Adapter (IEEE 488 bus)			
MC6805P2	Motorola		30	Microcontroller, 8-Bit (4K ROM, 176 bytes RAM)				MC68A488	Motorola		130
MC6805P6	Motorola			MC68HC05B4	Motorola			HEF4738	Signetics		
MC6805U2	Motorola			Microcontroller, 8-Bit (4K ROM, 192 bytes RAM)				Parallel Interface			
MC6805U3	Motorola			MC68HC11D3	Motorola						

◊ Available in Surface Mount Package

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
6800 (Cont'd)				Microcomputer (external ROM) (Cont'd)				Floppy Disk Controller. See 8271, etc. under 8080. (Cont'd)			
RAM, Dual Port	MC68HC34	Motorola		TMP8039	Toshiba		55	μ PD765A	NEC		
				TMP8039-6	Toshiba			FDC1793	SMC		
ROM, I/O, Timer	EF6846	SGS-Thomson		Microcomputer (mask programmed ROM)				FDC1793-02	◊ SMC		120
				MBL80C49	Fujitsu			FDC1797	SMC		
Synchronous Address Multiplexer	SN74LS783	Motorola		M8048H	† Intel		60	FDC1797-02	◊ SMC		
Synchronous Serial Data Adapter (SSDA)				M8049H	Intel			FD1793-02	Western		
HD68A52	Hitachi		5	80A48L	Intel			FD1797-02	Western		
HD6852	Hitachi			80A49	Intel						
68A52	Micro-C			80C48	Intel			GPB Talker/Listener			
6852	Micro-C			80C49	Intel			8291	Intel		125
Video Converter				8048	Intel			I/O Expander for 8048 Family			
TS8306	SGS-Thomson			8048AH	Intel		65	M8243	† Intel		
TS8307	SGS-Thomson			8048H	Intel			8243	Intel		
TS8308	SGS-Thomson		10	8049AH	Intel			M5L8243	Mitsubishi		
TS8328	SGS-Thomson			8049H	Intel		70	M5M82C43	Mitsubishi		130
TS8408	SGS-Thomson			8049HL	Intel			μ PD82C43	NEC		
TS8428	SGS-Thomson			8050AH	Intel			μ PD8243	NEC		
UA1005	SGS-Thomson			INS8048	◊ National			MCM82C43	OKI		
Video Display Generator	MC6847	Motorola	15	INS8048L	◊ National			TMP82C43	Toshiba		
Single Chip Color Palette	EF9369	SGS-Thomson		INS8049L	◊ National			Multi-Universal Asynchronous Receiver Transmitter			
Octal Buffer/Latch, Three-State	6882	Micro-C		INS8050	◊ National		75	SAB8256A	Siemens		
				INS8050L	◊ National			Priority Interrupt Control. See 8214, etc. under 8080.			
7000				MSM80C48	◊ OKI (3602)			8214	Intel		135
Microcomputer, RAM, I/O (microlanguage processor)	TMS70C00	◊ TI		MSM80C49	◊ OKI (3602)			Priority Interrupt Controller			
Microcomputer, RAM, ROM, I/O (microlanguage processor)	TMS70C20	◊ TI		MSM80C50	OKI (3602)			82C59	*† SMC		
TMS70C40	◊ TI		20	SCN8049A	◊ Signetics		80	Programmable Communication Interface (USART) See 8251, etc. under 8080.			
Encryption, Federal Processing Standard Pub. 46	TMS75C00	TI		SCN8050A	◊ Signetics			8251A	AMD		
	TMS7500	TI		TMP80C48A	Toshiba			8251A	◊ Intel		
8048				TMP80C49A	Toshiba		85	μ PD71051	◊ NEC		140
Microcomputer (erasable PROM)				TMP80C49A-6	Toshiba			μ PD8251	NEC		
M8748	† Intel			TMP80C50A	Toshiba			μ PD8251A	NEC		
8748-8	Intel			TMP80C50A-6	Toshiba			μ PD8251AF	NEC		
8748H	Intel			TMP8048	Toshiba			71051	NEC		
8749H	◊ Intel			TMP8049	Toshiba			MSM82C51A	OKI (3600)		145
8749H-8	◊ Intel			TMP8049-6	Toshiba			TMP8251A	Toshiba		
Microcomputer (external ROM)				Microcomputer, Piggyback EPROM				Programmable Interrupt Controller. See 8259, etc. under 8080.			
MBL80C39	Fujitsu			NS87P50	National		90	8259	◊ Intel		
M8035L	† Intel			Microcomputer, RAM, ROM, I/O				8259-5	◊ Intel		
80A35	Intel			M5L8035	Mitsubishi			8259A	◊ Intel		
80A39	Intel			M5L8039-11	Mitsubishi			8259A-2	◊ Intel		
80C35	Intel			M5L8040H	Mitsubishi			8259A-8	◊ Intel		150
80C39	Intel			M5L8042	Mitsubishi			μ PD8259	NEC		
8035AHL	Intel			M5L8048	Mitsubishi			μ PD8259-2	NEC		
8039AHL	Intel			M5L8049	Mitsubishi			μ PD9259A	NEC		
8039HL	Intel			M5L8049-6	Mitsubishi			TMP8259A	Toshiba		
8040AHL	Intel			MSM80C39-6	Mitsubishi			Programmable Interval Timer			
INS8035	National			M5M80C49	Mitsubishi			82C54	† SMC		155
INS8035L	National			Microcomputer, RAM, ROM, I/O (11 MHz)				Programmable Interval Timer. See 8253, etc. under 8080.			
INS8039	National			TMP8048A	Toshiba		100	μ PD8253-2	NEC		
INS8039L	National			TMP8049A	Toshiba			μ PD8253-5	NEC		
INS8040	National			Microcomputer, ROM, RAM, I/O				Programmable Peripheral Interface. See 8255, etc. under 8080.			
INS8040L	National			8020H	Intel			8255A	◊ Intel		
MSM80C35	OKI (3602)			8021H	Intel			μ PD8255	NEC		
MSM80C39	OKI (3602)			Microcomputer (ROM, RAM, I/O, on-board A/D)				μ PD8255A-5	NEC		160
MSM80C40	OKI (3602)			8022	Intel			PROM (erasable), I/O			
SCN8039A	◊ Signetics			Microcontroller, 8-Bit (has 8048 instruction set)				8755A	Intel		
SCN8040	◊ Signetics			PCD3346	Signetics		105	μ PD8755A	NEC		
TMP80C35A	Toshiba			Bidirectional Bus Driver. See 8216, 8226, etc. under 8080				RAM, I/O, Timer			
TMP80C39A	Toshiba			8216	Intel			HS81C55RH	† Harris		
TMP80C39A-6	Toshiba			8226	Intel			HS81C56RH	† Harris		
TMP80C40A	Toshiba			μ PB8216	NEC			M8155H	† Intel		165
TMP80C40A-6	Toshiba			μ PB8226	NEC			8155	Intel		
TMP8035	Toshiba			CRT Controller. See 8275, etc. under 8080.				8155-2	Intel		
(Continued)				8275	Intel		110	8155H	Intel		
				SCN2672	◊ Signetics			8155H-2	Intel		
				Decoder, 1 of 8. See 8205, etc. under 8080.				8156	Intel		170
				8205	Intel			8156-2	Intel		
				Floppy Disk Controller. See 8271, etc. under 8080.				8156H	Intel		
				8271	Intel		115	8156H-2	Intel		
				8271-6	Intel			μ PD8155	NEC		
				1797	Micro-C			μ PD8156	NEC		175
				1797-02-16	Micro-C			MSM81C55	OKI (3600)		
				765-092	Micro-C			(Continued)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8048 (Cont'd)				Microcontroller, (extended tmp. range -40 to 110°C) SAB80535-T40/110 ♦ Siemens				Microcontroller, 8-Bit (32Kx8 EPROM) P87C528 Signetics (3632)			
RAM, I/O, Timer (Cont'd)				Microcontroller, I/O Expanded (mask programmable ROM) SC80C451 Signetics SC83C451 Signetics				Microcontroller, 8-Bit (32Kx8 ROM) P83C528 Signetics (3632)			
TMP8155 Toshiba				Microcontroller, 8-Bit (4Kx8 EPROM) P87C550 Signetics (3633) 87C451 Signetics				Microcontroller, 8-Bit (4Kx8 EPROM, 128x8 RAM) SC87C451 ♦ Signetics SC87C51 ♦ Signetics			
ROM, I/O HS83C55RH ‡ Harris				Microcontroller, 8-Bit (4Kx8 ROM) P83C550 Signetics (3633) 83C451 Signetics				Microcontroller, 8-Bit (4Kx8 ROM, 128x8 RAM) SCN8051AH ♦ Signetics SC80C31B ♦ Signetics SC80C51B ♦ Signetics S80C851 Signetics S83C851 Signetics 80CL410 Signetics 80C851 Signetics 83CL410 Signetics 83C851 Signetics			
8355 Intel				Microcontroller, 8-Bit (A/D, capture/compare timer, PWM) S80C552 Signetics S83C552 Signetics				Microcontroller, 8-Bit (4Kx8 ROM, 256x8 RAM) SCN8050 ♦ Signetics			
MSM83C55 OKI (3600)				Microcontroller, 8-Bit (A/D, 8Kx8 ROM, 256x8 RAM) PCB80C562 Signetics PCB83C562 Signetics S87C552 Signetics 80C552 Signetics 80C562 Signetics 83C552 Signetics 83C562 Signetics 87C552 Signetics				Microcontroller, 8-Bit (8Kx8 EPROM) P87C52 Signetics 87C52 Signetics			
SDLC/HDLC Protocol Controller. See 8273, etc. under 8080.				Microcontroller, 8-Bit (ROMless) P80C32 Signetics 80C32 Signetics				Microcontroller, 8-Bit (8Kx8 ROM) P80C52 Signetics 80C52 Signetics			
8273 Intel				Microcontroller, 8-Bit (ROMless version) P80C528 Signetics (3632) P80C550 Signetics (3633) P80C592 Signetics 80C451 Signetics				Microcontroller, 8-Bit (8Kx8 ROM, 256x8 RAM) SCN8052AH ♦ Signetics S80C652 ♦ Signetics S83C652 ♦ Signetics S87C652 Signetics 80C652 Signetics 83C652 Signetics 87C652 Signetics			
7201 Micro-C				Microcontroller, 8-Bit (ROMless version, 128x8 RAM) SCN8031AH ♦ Signetics SCN8039 ♦ Signetics				Microcontroller, 12 input A/D SAB80C517 ♦ Siemens			
μPD7201A NEC				Microcontroller, 8-Bit (ROMless version, 256x8 RAM) SCN8032AH ♦ Signetics SCN8040 ♦ Signetics				Microcontroller, 16 MHz (external ROM) SAB80C32-16 ♦ Siemens SAB8031A-16 Siemens SAB8032B-16 ♦ Siemens			
Universal Peripheral Interface (slave microprocessor)				Microcontroller, 8-Bit (16 MHz) SAB80513-16 Siemens SAB80533-16 Siemens				Microcontroller, 16 MHz (mask programmed ROM) SAB80C52-16 ♦ Siemens SAB8051A-16 Siemens SAB8052B-16 ♦ Siemens			
M8741A † Intel				Microcontroller, 8-Bit (16Kx8 EPROM) P87C592 Signetics				Microcontroller, 20 MHz (external ROM) SAB8031A-20 ♦ Siemens			
8041AH Intel				Microcontroller, 8-Bit (16Kx8 ROM) P83C592 Signetics				Microcontroller, 20 MHz (Mask programmed ROM) SAB8051A-20 ♦ Siemens			
8041AH-2 Intel				Microcontroller, 8-Bit (16Kx8 ROM, 256x8 RAM) S83C654 Signetics (3634) S87C654 Signetics (3634) 83C654 Signetics (3634) 87C654 Signetics (3634)				Microcontroller (32K RAM) DS5000 Dallas			
8042 Intel				Microcontroller, 8-Bit (2Kx8 EPROM) 87C51 Signetics 87C751 Signetics (3635) 87C752 Signetics (3636)				Bus Compatible Digital Pulse Width Modulator. IXDP610 ♦ IXYS			
8641A Intel				Microcontroller, 8-Bit (2Kx8 EPROM, 64x8 RAM) S87C751 ♦ Signetics (3635) S87C752 ♦ Signetics (3636)				8080			
8741A Intel				Microcontroller, 8-Bit (2Kx8 ROM) 83C751 Signetics (3635) 83C752 Signetics (3636)				Microcomputer, 8-Bit (external ROM) SAB8031A Siemens			
8742 Intel				Microcontroller, 8-Bit (2Kx8 ROM, 128x8 RAM) SCN80C49 ♦ Signetics				Microcomputer, 8-Bit (mask programmable ROM) SAB8051A Siemens			
M5L8041A Mitsubishi				Microcontroller, 8-Bit (2Kx8 ROM, 64x8 RAM) S83C751 ♦ Signetics (3635)				Microprocessor			
μPD8741A Signetics				Microcontroller, 8-Bit (20 MHz) SAB8032B-20 Siemens				M8080A † Intel			
Octal Bus Transceiver								8080A Intel			
M8286 † Intel								8080A-1 Intel			
M8287 † Intel								8080A-2 Intel			
8051								IL8080A Lansdale (3549)			
Microcomputer and HDLC/SDLC Serial Interface								8080A Rochester			
8044 Intel								Microcontroller, 8-Bit (external ROM) SAB80533 Siemens			
8744 Intel											
Microcomputer (erasable PROM)											
8751H AMD											
M8751H *† Intel											
8751 * Intel											
Microcomputer (external ROM)											
80C31 ♦ Intel											
8031AH ♦ Intel											
SAB80C32 ♦ Siemens											
SAB80C535 ♦ Siemens											
SAB8032B ♦ Siemens											
SCC80C31 ♦ Signetics											
SCN8031 Signetics											
Microcomputer (mask programmed ROM)											
M80C51 *† Intel											
80C51 * Intel											
8051AH ♦ Intel											
8052AH Intel											
MCM80C51 OKI (3602)											
SAB80C515 ♦ Siemens											
SAB8052B ♦ Siemens											
SCC80C51 ♦ Signetics											
SCN8051 Signetics											
Microcomputer (mask programmed 16K ROM)											
SAB80513 ♦ Siemens											
Microcontroller, (extended temp. range -40 to + 85°C)											
SAB8031A-T40/85 ♦ Siemens											
SAB8051A-T40/85 ♦ Siemens											
Microcontroller, (extended temp. range -40 to + 100°C)											
SAB8032B-T40/100 ♦ Siemens											
SAB8052B-T40/100 ♦ Siemens											
Microcontroller, (extended temp. range -40 to + 110°C)											
SAB8031A-T40/110 ♦ Siemens											
Microcontroller, (extended temp. range -40 to + 85°C)											
SAB80C32-T40/85 ♦ Siemens											
SAB80C515-T40/85 ♦ Siemens											
SAB80C52-T40/85 ♦ Siemens											
SAB80C535-T40/85 ♦ Siemens											
SAB80515-T40/85 ♦ Siemens											
SAB80535-T40/85 ♦ Siemens											
Microcontroller, (extended temp. range -40 to 110°C)											
SAB8051A-T40/110 ♦ Siemens											
Microcontroller, (extended temp. range -40 to + 110°C)											
SAB80515-T40/110 ♦ Siemens											

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8080 (Cont'd)				Decoder, 1 of 8 (See also Digital-TTL-Decoders, 3222, 74LS138, etc.)				Multifunction Microprocessor Support Controller			
Microcontroller, 8-Bit (mask programmable ROM)	SAB80513	Siemens		INS82LS05	National			8256AH	Intel		
Analog Input, MUX, A/D Converter	ADC0816C	National		SN74LS138	* TI			Peripheral Interface, Programmable	8255	◊ Krueger	
μPD7001	NEC			Display Controller	INS8247	National		Priority Interrupt Controller	82C59	*† SMC	105
μPD7002	NEC			INS8248	National			Programmable Communication Interface (USART) (See also Interface-Transmitters, Receivers)	M8251A	*† Intel	
Arithmetic Processing Unit	AM9511A-1	AMD	5	Dynamic RAM Controller	82C03	Intel	55	8251A	◊* Intel		
M8231A	† Intel			82C08	Intel			2651	Micro-C		
8231A	◊ Intel			8202A	Intel			2661	Micro-C		
Asynchronous Communication Element	8250	Krueger (3548)		8203	Intel			2661-1	Micro-C		110
INS8250	National			Error Detection & Correction Chip	8206	Intel		μPD8251	NEC		
Asynchronous Communications Element	SSI73M450	◊ SiliconSys (3688)	10	Floating Point Processor	8232	Intel	60	μPD8251A	NEC		
82C50	† SMC			Floppy Disk Controller	8271	Intel		71051	NEC		
Bidirectional Bus Driver	8216	Intel		8271	Intel			MSM82C51A	OKI (3600)		
8226	Intel			1797	Micro-C			SCN2651C	Signetics		115
Bidirectional Bus Driver (See also Digital-Miscellaneous-Bus Drivers, Interface-Line Transceivers.)	HS82C08RH	‡ Harris	15	1797-02-16	Micro-C			SCN2661A	◊ Signetics		
M8216	† Intel			765-092	Micro-C			SCN2661B	◊ Signetics		
M8226	† Intel			μPD765A	NEC			SCN2661C	◊ Signetics		
IL8216	Lansdale (3549)			FDC1793	SMC			Programable Counter	71054	Micro-C	
IL8226	Lansdale (3549)			FDC1793-02	◊ SMC			μPD71054	◊ NEC		120
DP7304	† National			FDC1797	SMC			Programable Direct Memory Access Controller	AM9517A-5	* AMD	
DP8216	National			FDC1797-02	◊ SMC		70	M8257	† Intel		
DP8216M	† National			FD1793-02	Western			8257	Intel		
DP8226	National			FD1797-02	Western			8257-5	Intel		
DP8226M	† National			GPiB Controller	8292	Intel		71055	Micro-C		125
DP8304	National			GPiB Interface Controller, Intelligent	COM7210	SMC		μPD71055	◊ NEC		
DS8833	National			GPiB Talker/Listener Interface	8291A	Intel		μPD8257	NEC		
DS8835	National			GPiB Transceiver	8293	Intel	75	μPD8257-5	NEC		
INS8216	National			GPiB Universal Interface	μPD7210	NEC		Programable Interrupt Controller	8259A	◊ Intel	
INS8226	National			I/O Expander for 8041A/8741A	8243	Intel		8259A-2	◊ Intel		130
μPB8216	NEC			TMP8243	Toshiba			8259A-8	◊ Intel		
μPB8226	NEC			I/O Latch (see also Digital-CMOS and TTL, Latches)	INS82C06	National		μPD8259	NEC		
Bus Controller	8218	Intel		I/O Port	HS82C12RH	‡ Harris	80	μPD8259-2	NEC		
Clock Generator and Driver	M8224	† Intel		8212	† Intel			μPD9259A	NEC		135
8224	Intel			8212	Intel			Programable Interval Timer	μPD8253-2	NEC	
DP8224	National			IL8212	Lansdale (3549)			μPD8253-5	NEC		
INS8224	National			DP8212	National			Programable Peripheral Interface	8255A-5	AMD	
Communication Interface, Programmable	8251	Krueger		DP8212M	† National			M8255A	*† Intel		
Counter, CMOS Programmable	82C54	† SMC		INS8212	National			82C55A	* Intel		
CRT Controller	8275	Intel		μPB8212	NEC			8255A	◊* Intel		140
8276	Intel			MSM82C12	OKI (3600)			μPD8255	NEC		
CRT Controller, Character and Screen Programmable, Cursor, Light Pen Detection	MB89322	Fujitsu	40	Interrupt Controller, Programmable	8259	Krueger		μPD8255A-5	NEC		
Data Acquisition System, 8 Channel, 8-Bit Conversion	AD7581A	◊ AD (3322, 3325)		Interval Timer, Programmable	8254	◊ Krueger	90	MSM82C55A	OKI (3600)		
AD7581B	◊ AD (3322, 3325)			Interval Timer, Programmable	8253	Krueger		MSM8255A	OKI		
AD7581C	◊ AD (3322, 3325)			Keyboard Display Controller	8279	Intel		RAM(128x8) with 16-Bit I/O	INS8154	National	145
AD7581J	◊ AD (3322, 3325)			8279-5	Intel			SDLC/HDLC Protocol Controller	8273	Intel	
AD7581K	◊ AD (3322, 3325)			μPD8279-5	NEC			7201	Micro-C		
AD7581L	◊ AD (3322, 3325)			KR9600	SMC			μPD7201A	NEC		
Data Ciphering Processor	AM9518	AMD		KR9601	SMC			Serial Data Communications Controller	8274	* Intel	
Data-Encryption Device (encrypts and decrypts data according to NBS standard)	8294	Intel		KR9602	SMC			Synchronous Receiver/Transmitter (BiSync, SDLC)	7201	Micro-C	150
Decoder, 1 of 8 (See also Digital-TTL-Decoders, 3222, 74LS138, etc.)	8205	Intel		Keyboard Encoder (See also Interface-Keyboard Encoders)	INS8245	National		μPD7201A	NEC		
DM74LS138	National		50	INS8246	National			System Controller and Bus Driver	M8228	† Intel	
				Multi-Universal Asynchronous Receiver Transmitter	8256	Intel	100	8228	Intel		
				TIM8228	TI			8238	Intel		
				TIM8238	TI			IL8228	Lansdale (3549)		155

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line
8080							
(Cont'd)							
Universal Peripheral Interface (slave microprocessor)				Floppy Disk Controller. See 8271, etc. under 8080.			
8041AH	Intel			8271	Intel		
8041AH-2	Intel			1797	Micro-C		50
8641A	Intel			1797-02-16	Micro-C		
8741A	Intel			765-092	Micro-C		
Octal Bus Transceiver				μPD765A	NEC		
M8286	† Intel		5	FDC1793	SMC		
M8287	† Intel			FDC1793-02	◊ SMC		55
				FDC1797	SMC		
				FDC1797-02	◊ SMC		
				FD1793-02	Western		
				FD1797-02	Western		
8085A				GPIO Controller			
Microprocessor				8292	Intel		60
HS80C85RH	‡ Harris			GPIO Interface Controller, Intelligent			
M8085A	*† Intel			COM7210	SMC		
M8085AH	*† Intel			GPIO Talker/Listener Interface			
8085AH	◊ Intel		10	8291A	Intel		
8085AH-2	◊ Intel			I/O Expander			
M5L8085A	Mitsubishi			8243	Intel		
μPD8085A-2	NEC			μPD82C43	NEC		
μPD8085AH	NEC			μPD8243	NEC		65
CA80C85B	Newbridge			I/O Port			
				M5L8212	Mitsubishi		
				Interrupt Controller Programmable			
MSM80C85A	◊ OKI		15	8259	Krueger		
TMP8085A	Toshiba			TMP82C59	Toshiba		
				Interval Timer, Programmable			
				8253	Krueger		
				8254	◊ Krueger		
Microprocessor Bus Controller				Keyboard/Display Controller, Programmable			
8219	Intel			M5L8279-5	Mitsubishi		20
CA82C88	† Newbridge			TMP82C79-2	Toshiba		
				TMP8279-5	Toshiba		
				Multi-Universal Asynchronous Receiver Transmitter			
				SAB8256A	Siemens		
Asynchronous Communications Element				Peripheral Interface, Programmable			
CA82C50A	Newbridge			8255	◊ Krueger		25
Bidirectional Bus Driver. See 8216, 8226, etc. under 8080.				Priority Interrupt Controller			
8216	Intel			82C59	*† SMC		
8226	Intel			Programmable Communication Interface (USART)			
M5L8226	Mitsubishi			8251A	◊ Intel		
μPB8216	NEC			μPD8251	NEC		
μPB8226	NEC			μPD8251A	NEC		
Bus Driver, Bi-Directional				71051	NEC		
M5L8216	Mitsubishi			MSM82C51A	OKI		80
Clock/Calendar, Real-Time				TMP82C51A-2	Toshiba		
146818	† SMC			TMP82C51A-8	Toshiba		
Clock Generator and Driver				Programmable Communications Interface (USART)			
M5L8284A	Mitsubishi			M5L8251A-5	Mitsubishi		
CA82C84A	† Newbridge			Programmable Direct Memory Access Controller			
				8237A	AMD		
				8237A-5	AMD		
Communication Interface Programmable				HS82C37ARH	*‡ Harris		
8251	Krueger		30	MD82C37A	*† Harris		
Converter, A/D (8-Bit)				82C37A	◊ Harris		
M58990	Mitsubishi			82C37A-5	◊ Harris		
Counter, CMOS Programmable				M8257	† Intel		
82C54	† SMC			8237A	◊ Intel		
CRT Controller. See 8275, etc. under 8080.				8237A-4	◊ Intel		
8275	Intel						

IC MASTER 1992

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8085A (Cont'd)				NSC800				Microcomputer (Cont'd)			
Static Microprocessor with Extended Instruction Set	CA80C85S	† Newbridge		Microprocessor	NSC800	National	35	Z8611-MCU	◊ Zilog		85
Universal Peripheral Interface (slave microprocessor)	8041A	Intel			NSC800-1	National		Z8613-MCU	Zilog		
	8741A	Intel			NSC800-4	National		Z8671-MCU	Zilog		
Octal Bus Transceiver, Inverting	M8287	† Intel	5	Bidirectional Transceiver	MM82PC08	National		Z8681-MCU	◊ Zilog		
	8287	◊ Intel						Z8800-MCU	Zilog		
	M5L8287	Mitsubishi		Bidirectional Transceiver (CMOS)	MM82PC08	National		Microcomputer, FORTH Interpreter	Z8874-MCU	Zilog	
Octal Bus Transceiver, Non-Inverting	M8286	† Intel						Microcomputer, ROMless, DMA Controller	Z8801-MCU	Zilog	
	8286	◊ Intel		Intelligent I/O, 3 Programmable Ports	NSC831	National	40	Microcomputer (ROMless, 12 MHz)	Z86R91A	† SGS-Thomson	90
	M5L8286	Mitsubishi			NSC831-1	National		Microcomputer, ROMless, 24 I/O Lines, UART	Z86C91-MCU	Zilog	
Octal Latch, Inverting	M5L8283	Mitsubishi	10		NSC831-4	National		Z8691-MCU	Zilog		
Octal Latch, Non-Inverting	M5L8282	Mitsubishi		RAM, I/O, Timer	NSC810	National		Microcomputer (ROMless, 8 MHz)	Z86R91	† SGS-Thomson	45
8086/88					NSC810-1	National		Microcomputer, Tiny Basic	Z8671	◊ SGS-Thomson	
Asynchronous Communications Element	SS17M450	◊ SiliconSys (3688)			NSC810-4	National		Microcomputer, 2K bytes of ROM, 128 bytes of RAM, 22 I/O Lines	Z8600-MCU	Zilog	95
Bus Arbiter	M5L8289	Mitsubishi		UART	NSC858	National		Microcomputer, 2K ROM	Z8601	◊ SGS-Thomson	
	SAB8289-1	Siemens		8-Bit I/O Port	MM82PC12	National		Z8601A	◊ SGS-Thomson		
Bus Compatible Digital Pulse Width Modulator	IXDP610	IXYS	15	8X300				Microcomputer (2K ROM, 12 MHz)	Z8600A	† SGS-Thomson	
Bus Controller	M5L8288	Mitsubishi		Microprocessor	N8X305	Signetics		Microcomputer (2K ROM, 8 MHz)	Z8600	† SGS-Thomson	50
Clock/Calendar, Real-Time	146818	† SMC			S8X305	† Signetics		Microcomputer, 4K EPROM	Z86E11	† SGS-Thomson	100
Clock Generator and Driver for 8086 MPU (8 MHz)	SAB8284B	Siemens		FIFO RAM Controller	N8X60	Signetics		Z86E11A	† SGS-Thomson		
Clock Generator and Driver for 8086 MPU (10 MHz)	SAB8284B-1	Siemens			S8X60	† Signetics		Microcomputer (4K EPROM, OTP, 12 MHz)	Z8611E	† SGS-Thomson	55
Communication Interface, Programmable	8251	Krueger	20	I/O Port, Asynchronous, Field Programmable Address	N8T36	Signetics		Microcomputer, 4K ROM	Z8611	◊ SGS-Thomson	
Dynamic RAM Controller Interface Circuit	DP84432	National			N8X376	Signetics		Z8611A	◊ SGS-Thomson		
Interrupt Controller, Programmable	TMP82C59	Toshiba		I/O Port, Latched Bidirectional	S8T35	† Signetics		Microcomputer (4K ROM, 12 MHz)	Z8610A	† SGS-Thomson	60
Interrupt Controller, Programmable	8259	Krueger			S8T36	† Signetics		Microcomputer (4K ROM, 8 MHz)	Z8610	† SGS-Thomson	
Interval Timer, Programmable	8253	Krueger		I/O Port, Synchronous, Field Programmable Address	N8T32	Signetics		Microcomputer (8 MHz)	Z84C00H	◊† SGS-Thomson	
	8254	◊ Krueger			N8T33	Signetics		Microcomputer (8K EPROM, OTP, 12 MHz)	Z8621E	† SGS-Thomson	65
Keyboard Interface Controller	KyBRD	† SMC		I/O Register Array (16x8 or 8x16)	N8X320	Signetics		Microcomputer (8K EPROM, 12 MHz)	Z86E21A	† SGS-Thomson	
Multi-Protocol Serial Communications Controller	SAB7201A	Siemens		Interrupt Controller	N8X310	Signetics	25	Microcomputer (8K EPROM, 8 MHz)	Z86E21	† SGS-Thomson	110
Peripheral Interface, Programmable	8255	◊ Krueger			S8X310	† Signetics		Microcomputer, 8K ROM	Z8621	◊ SGS-Thomson	
Priority Interrupt Controller	82C59	*† SMC		RAM, Static (256x8)	N8X350	Signetics		Z8621A	◊ SGS-Thomson		
Programmable Interval Timer	CA82C54	Newbridge (3593)	30		S8X350	† Signetics		Microcomputer, 8K ROM, DMA Controller	Z8820-MCU	Zilog	
8088				TLCS90				Z8822-MCU	Zilog		
Microprocessor, 8-Bit (10 MHz)	SAB80188-1	◊ Siemens		Microcomputer (CPU, timer, serial channel, A/D, stepping motor driver, RAM and ROM)	TMP90C840	Toshiba (3731)	70	Microcomputer (8K ROM, 12 MHz)	Z8620A	† SGS-Thomson	115
	SAB8088-1	◊ Siemens			TMP90C841	Toshiba (3731)		Microcomputer (8K ROM, 8 MHz)	Z8620	† SGS-Thomson	
PC/XT Chip Set (8086)	VL82C031/2	VLSI Tech		Z8				Microcomputer (16 MHz)	TS68000-16	◊† SGS-Thomson	
				Microcomputer	EF68HC04J3	◊ SGS-Thomson		Z80			
					EF68HC04P2	◊ SGS-Thomson		Microprocessor	Z8400	GoldStar	
					Z8681	◊ SGS-Thomson			Z80-CPU-3	Micro-C	120
					Z8681A	◊† SGS-Thomson			Z80H-CPU	Micro-C	
					Z86C08-MCU	Zilog			780	Micro-C	
					Z86C10-MCU	Zilog			μPD70008	NEC	
					Z86C20-MCU	Zilog			μPD70008A	NEC	
					Z86C21-MCU	Zilog			μPD780	NEC	
					Z86E21-MCU	Zilog	80		μPD780-1	NEC	125
					Z8601-MCU	◊ Zilog					
					Z8603-MCU	Zilog					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Device	Source	Line	Function	Device	Source	Line
Z80 (Cont'd)				Serial I/O Controller (Cont'd)			
Microprocessor (Cont'd)				LH0087B	Sharp		
μPD780-2	NEC			TMPZ84C0A	Toshiba		
LH0080	Sharp			TMPZ84C40A	Toshiba		
LH0080A	Sharp			TMPZ84C40A-6	Toshiba		
TMPZ84C00	Toshiba			TMPZ84C41	Toshiba		
TMPZ84C00-3	Toshiba			TMPZ84C41A	Toshiba		
TMPZ84C01	Toshiba			TMPZ84C41A-6	Toshiba		
Z180-MPU	Zilog			TMPZ84C42	Toshiba		
Z80	Zilog			TMPZ84C42A	Toshiba		
Z80180-MPU	Zilog			TMPZ84C42A-6	Toshiba		
Z84C00-CPU	Zilog			TMPZ84C43	Toshiba		
Z8400-CPU	◊ Zilog			TMPZ84C44A	Toshiba		
				Z80-SIO	Zilog		
				Z8440-SIO	◊ Zilog		
Microprocessor and Clock Generator Controller				Serial Input/Output			
TMPZ84C02-6	Toshiba			Z80SIO/X	Krueger		
Microprocessor (2.5 MHz)				Serial Input/Output Controller			
Z8400	◊ SGS-Thomson			Z84C40-SIO	Zilog		
Microprocessor (4 MHz)				Z84C41-SIO	Zilog		
Z84C00A	◊ SGS-Thomson			Z84C42-SIO	Zilog		
Z8400A	◊ SGS-Thomson			Z84C44-SIO	Zilog		
TMPZ84C00A	Toshiba			Z8441-SIO	Zilog		
				Z8442-SIO	Zilog		
				Z8444-SIO	◊ Zilog		
Microprocessor (6 MHz)				UART, Dual (2.5 MHz NMOS)			
Z80B-CPU	Micro-C			LH0088	Sharp		
Z84C00B	◊ SGS-Thomson			UART, Dual (4 MHz NMOS)			
Z8400B	◊ SGS-Thomson			LH0088A	Sharp		
TMPZ84C00A-6	Toshiba			UART, Dual (6 MHz NMOS)			
				LH0088B	Sharp		
Microprocessor (8 MHz)				Dual Asynchronous Receiver/Transmitter			
Z8400H	◊ SGS-Thomson			Z8470	◊ SGS-Thomson		
TMPZ84C00A-8	Toshiba			Z80-DART	Zilog		
				Z8470-DART	Zilog		
Microprocessor, 16-Bit				Dual Asynchronous Receiver-Transmitter			
Z80280-MPU	Zilog			Z80DART	Krueger		
Microprocessor, 16-Bit with Enhanced Z80 Instruction Set				Z80 MPU (4 MHz), Clock Generator Controller, Counter/Timer, I/O			
Z280-MPU	Zilog			TMPZ84C011A	Toshiba		
Bus Compatible Digital Pulse Width Modulator				TMPZ84C013A	Toshiba		
IXDP610	IXYS			TMPZ84C015A	Toshiba		
Clock Generator and Controller				Z80 MPU (6 MHz), Clock Generator Controller, Counter/Timer Controller, I/O			
TMPZ84C60	Toshiba			TMPZ84C011A-6	Toshiba		
TMPZ84C61	Toshiba			TMPZ84C013A-6	Toshiba		
T6497	Toshiba			TMPZ84C015A-6	Toshiba		
Counter/Timer Circuit				Miscellaneous			
Z8430	GoldStar			Microcomputer, 8-Bit (LCD controller/driver, 4K ROM, 168 bytes RAM)			
Z80-CTC	Micro-C			LC86104A	Sanyo		
Z80B-CTC	Micro-C			Microcomputer, 8-Bit (LCD controller/driver, 8K ROM, 168 bytes RAM)			
Z84C30	◊ SGS-Thomson			LC86108A	Sanyo		
Z8430	◊ SGS-Thomson			8/16 Bit			
LH0082	Sharp			1600			
LH0082A	Sharp			Asynchronous/Synchronous Transmitter/Receiver (ASTRO) (See also Interface-Serial Transmitters-Receivers)			
LH0082B	Sharp			UC1671	Western		
LH0082E	Sharp			Floppy Disk Controller/Formatter			
TMPZ84C30	Toshiba			MB8866	Fujitsu		
TMPZ84C30A	Toshiba			FDC1791-02	SMC		
TMPZ84C30A-6	Toshiba			FDC1795-02	SMC		
TMP82C53	Toshiba			FD1791-02	◊ Western		
Z84C30-CTC	Zilog			FD1795-02	Western		
Z8430-CTC	◊ Zilog			8086			

♦ Available in Surface Mount Package

353

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8086 (Cont'd)								Programmable Interrupt Controller (Cont'd)			
Microprocessor, 16-Bit				Bus Transceiver, Octal	82C86H/883	◊† Harris		SAB8259A	Siemens		105
8086	◊ AMD			Bus Transceiver, Octal Inverting	82C87H/883	◊† Harris		SAB8259A-2	Siemens		
8086-1	◊ AMD			Chipset, 8088/8086/V30 (PC/XT Compatible)	82C100	Chips&Tech		82C59	† SMC		
8086-2	◊ AMD			Clock/Calendar, Real-Time	146818	† SMC		Programmable Interval Timer			
HS80C86RH	‡ Harris		5	Clock Generator and Controller	HS82C85RH	‡ Harris	60	HS82C54RH	‡ Harris		110
MD80C86	† Harris			82C85	◊ Harris			82C54	◊† Harris		
80C86	◊ Harris			Clock Generator and Driver	8284A	AMD		82C54-Cell	◊ Harris		
80C86-2	◊ Harris			8284A	◊† Harris			82C54	† SMC		
M8086	*† Intel		10	82C84A	◊ Harris			Programmable Interval Timer (CMOS)			
80286	* Intel			82C84A/883	◊ Harris			MD82C54	*† Harris		
8086	◊† Intel			M8284	*† Intel			82C54/883	◊† Harris		
8086-1	◊† Intel			82C84A	* Intel			Programmable Interval Timer (8 MHz)			
8086-2	◊† Intel			8284A-1	* Intel			82C54	AMD		
μPD8086	NEC			μPB8284A	NEC			Programmable Interval Timer (10 MHz)			
μPD8086-2	NEC			μPD71084	◊ NEC			82C54-2	AMD		65
MSM80C86	OKI (3600)		15	CA82C84A	† Newbridge			Programmable Interval Timer (12.5 MHz)			
Bus Controller	82288	Intel		MSM82C84A	OKI (3593)			82C54-12	AMD		115
Clock and Ready Interface, for iAPX286	82284	Intel		82C84	† SMC			Programmable Peripheral Interface			
8086/88				Control Buffer (For 80386/AT Chipset)	82A306	Chips&Tech		HS82C55ARH	*‡ Harris		120
Microprocessor, High Integration	80186	* Intel		Data Buffer (For 80386/AT Chipset)	82A305	Chips&Tech		MD82C55A	◊† Harris		
Microprocessor, I/O Preprocessor	8089	◊ Intel		Direct Memory Access (DMA) Controller, PS2 Model 30				82C55A	◊† Harris		
Microprocessor, 8-Bit				CMOS, IBM-Compatible, 2 Chip Set, 10	VL82C37A	◊ VLSI Tech		82C55A-Cell	Harris		
80188	Intel			DMA Controller	82258	Intel		82C55A-5	◊† Harris		
SAB80188	Siemens			Dynamic RAM Controller	8202A	Intel		CA82C55A	† Newbridge (3593)		
SAB8088	Siemens			8203	Intel			UM82C55A	UMC		
SAB8088-2	Siemens			8207	Intel			Programmable Peripheral Interface (CMOS)			
Microprocessor, 16-Bit				8208	Intel			82C55A/883	◊† Harris		75
SAB80186	Siemens			DP84422	National			Serial Communications Controller			
A Clock Generator and Driver (5 MHz)	82C84A-5	* Intel	25	GPIO Interface Controller	COM7210	SMC		CA85C30	Newbridge		
Asynchronous Communications Element				GPIO Talker/Listener	8291A	Intel		Serial Communications Interface			
82C50A	◊† Harris			Keyboard Interface Controller	KyBRD	SMC		HS82C52RH	*‡ Harris		125
82C50A-Cell	Harris			Multi-Universal Asynchronous Receiver Transmitter	8256	Intel		82C52	◊† Harris		
CA82C50A	Newbridge			SAB8256A	Siemens			82C52-Cell	◊ Harris		
82C50	† SMC			Multiprotocol Serial I/O Controller	μPD7210	NEC		Serial Controller Interface			
Bus Arbiter				Printer Adapter Interface	UM82C11	UMC		CA82C52	Newbridge (3593)		80
82C89	◊ Harris			Priority Interrupt Controller				82C52/883	◊† Harris		
82C89/883	◊ Harris			HS82C59ARH	‡ Harris			Text Coprocessor			
M8289	† Intel			MD82C59A	◊† Harris			82730	Intel		130
8289	◊ Intel			82C59A	◊ Harris			Universal DMA Controller, 16-Bit, 10 MHz			
IL8289	Lansdale (3549)			82C59A-Cell	Harris			AM9516A-1	AMD		
μPB8289	NEC			82C59A-5	◊ Harris			Universal DMA Controller, 16-Bit, 4 MHz			
SAB8289	Siemens			82C59A/883	◊ Harris			AM9516A-4	AMD		
Bus Arbiter (for 8088, 8086, and 80186 microprocessors)				MSM82C59A	OKI (3600)			Universal DMA Controller, 16-Bit, 6 MHz			
MBI8289A	PLX Tech			Programmable Asynchronous Communications Interface				AM9516A-6	AMD		
MBI8289B	PLX Tech			HD6406	◊† Harris			AM9516A-8	AMD		
Bus Controller				HD6406-Cell	◊ Harris			Video Interface Controller			
82C88	◊ Harris			Programmable DMA Controller	CA82C37A	† Newbridge (3593)		82731	Intel		135
82C88-Cell	◊ Harris			Programmable Interrupt Controller				Octal Bus Transceiver, Inverting			
82C88/883	◊ Harris			82C59A-2	* Intel			8287	AMD		
M8288	*† Intel			8259A	Intel			MD82C87H-5	◊† Harris		
82C88	Intel			CA82C59A	† Newbridge (3593)			82C87H	◊† Harris		
82188	Intel			82C59A-Cell	Harris			82C87H-5	◊ Harris		
8288	◊† Intel			82C59A-5	◊ Harris			M8287	† Intel		
8288-1	◊† Intel			82C59A/883	◊ Harris			IL8287	Lansdale (3549)		140
μPB8288	NEC			MSM82C59A	OKI (3600)			μPB8287	NEC		
μPD71088	◊ NEC			Programmable Asynchronous Communications Interface				μPD71087	◊ NEC		
CA82C88	† Newbridge (3593)			HD6406	◊† Harris			Octal Bus Transceiver, Non-Inverting			
MSM82C88	OKI (3600)			HD6406-Cell	◊ Harris			8286	AMD		
SAB8288	Siemens			Programmable DMA Controller	CA82C37A	† Newbridge (3593)		MD82C86H-5	◊† Harris		145
Bus Driver, Inverting, Octal Latching				Programmable Interrupt Controller				82C86H	◊† Harris		
82C83H/883	◊† Harris			82C59A-2	* Intel			M8286	† Intel		
Bus Driver, Octal Latching				8259A	Intel			IL8286	Lansdale (3549)		
82C82/883	◊† Harris			CA82C59A	† Newbridge (3593)			μPB8286	NEC		
Bus Interface Controller				(Continued)				μPD71086	◊ NEC		150
SAB82220	Siemens		55					Octal Latch, Inverting			
								MD82C83H	◊† Harris		
								82C83H	◊† Harris		
								M8283	† Intel		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
8086/88 (Cont'd)				Four-Phase Clock Generator and Driver				Microprocessor, Segmented (Cont'd)			
Octal Latch, Inverting	8283	Intel		TMS9904A	TI			Z8000	Zilog		85
IL8283		Lansdale (3549)		80286				Z8001-CPU	Zilog		
μPB8283		NEC		Microprocessor, Numeric Data	80287	Intel		Asynchronous Serial Communications Controller			
μPD71083		NEC						Z8031	SGS-Thomson		
SAB8283		Siemens						Z8031A	SGS-Thomson		
Octal Latch, Non-Inverting	MBL8282	Fujitsu		μCOM-70K				Clock Generator and Controller			
MD82C82		Harris		Microprocessor (8-Bit external bus)				Z8581-CGC	Zilog		
82C82		Harris		V20-5	Micro-C			Counter Timer I/O			
M8282		Intel		70108	Micro-C			Z8036-CIO	SGS-Thomson		90
8282		Intel		70108-8	Micro-C			Z8036A-CIO	SGS-Thomson		
IL8282		Lansdale (3549)		μPD70108-5	NEC			LH8036	Sharp		
μPB8282		NEC		μPD70108-8	NEC			LH8036A	Sharp		
μPD71082		NEC		Microprocessor (16-Bit external bus)				Z8036-Z-CIO	SGS-Thomson		
8088				70116-8	Micro-C			CRT Controller			
Microprocessor, 8-Bit	8088	AMD		μPD70116-5	NEC			AM8052	AMD		95
8088-1		AMD		μPD70116-8	NEC			Data Ciphering Processor (for data encryption)			
8088-2		AMD		12 Bit				AMZ8068	AMD		
80C88		Harris		2900				Z8068-DCP	Zilog		
8088		Intel		Microprogram Sequencer, 12-Bit				Z9518-DCP	Zilog		
8088-2		Intel		IDT39C10B	IDT			Direct Memory Access			
μPD8088		NEC		IDT39C10C	IDT			Z8016-Z-DTC	Zilog		
μPD8088-2		NEC		2900 Controller				DMA Transfer Controller			
MSM80C88		OKI (3600)		Microprogram Controller, 12-Bit				Z8516-DTC	Zilog		100
9900				CY7C910C	Cypress			DMA Transfer Controller			
Microcomputer ROM-Less	TM9995	TI		CY7C910M	Cypress			Z9516-DTC	Zilog		
Microprocessor	TMS9981	TI		GP502AD	Harris			FIFO Buffer Unit (128x8)			
Microprocessor, 16-Bit	TMS9900	TI		SFC2910	SGS-Thomson			Z8560-FIFO	Zilog		
Addressable Latch, 8-Bit	SN54LS259B	TI		6100				First In/First Out Buffer			
SN74LS259B		TI		Universal Asynchronous Receiver-Transmitter (UART)				Z8060-FIFO	SGS-Thomson		105
TIM9906		TI		(See also Interface-Serial Transmitters-Receivers)				Z8060A-FIFO	SGS-Thomson		
Asynchronous Communications Controller				HD6402-Cell	Harris			LH8060	Sharp		
TMS9902A		TI		HD6402/883	Harris			Z8060-Z-FIFO	Zilog		
Clock Generator and Driver (4-phase for 9900)				16 Bit				First In/First Out I/O			
TIM9904		TI		2900				Z8038-FIO	SGS-Thomson		110
Data Selector/Multiplexer (See also Digital-TTL-Multiplexers 74LS251)				Error Detection and Correction				Z8038A-FIO	SGS-Thomson		
SN54LS251		TI		IDT39C60A	IDT			LH8038	Sharp		
SN74LS251		TI		Microprogram Sequencer, 16-Bit				LH8038A	Sharp		
TIM9905		TI		IDT49C410	IDT			Z8038-Z-FIO	Zilog		
GPB Controller				IDT49C410A	IDT			Floppy Disk Controller			
SMJ9914A		TI		Quad 2901 with 64x16 Dual Port Memory Capacity				1797	Micro-C		
TMS9914A		TI		IDT49C402	IDT			1797-02-16	Micro-C		
Modem, 300 Baud				IDT49C402A	IDT			FDC1793	SMC		
SC11002		Sierra		6500				FDC1793-02	SMC		115
SC11003		Sierra		Microprocessor (software compatible with 8-bit 6500 series)				FDC1797	SMC		
Multi-Processor Interface				G65SC802	CMD Micro			FDC1797-02	SMC		
TMS9650		TI		G65SC816	CMD Micro			FD1793-02	Western		
Priority Encoder (See also Digital-TTL Miscellaneous, Priority Encoder, 74LS148)				W65C802	WDC			FD1797-02	Western		
TIM9907		TI		W65C816	WDC			General Purpose Interface Bus, NMOS			
Priority Encoder, 8-Line to 3-Line, Three-State				Z8000				LH8073	Sharp		120
SN74LS148		TI		Microprocessor, Non-Segmented				Intelligent Peripheral Controller			
SN74LS348		TI		Z8002	SGS-Thomson			LH8090	Sharp		
TIM9908		TI		Z8002A	SGS-Thomson			LH8090A	Sharp		
Programmable Systems Interface				Z8002B	SGS-Thomson			Key Encoder Data Transmitter/Receiver, NMOS			
TMS9901		TI		LH8002	Sharp			LH8661	Sharp		
Pulse DTMF Encoder				LH8002A	Sharp			Memory Management Unit			
TMS99531		TI		Microprocessor, Segmented				Z8010-MMU	SGS-Thomson		125
Synchronous Communications Controller				Z80-CPU	Micro-C			Z8010A-MMU	SGS-Thomson		
TMS9903		TI		Z8001-CPU-R	Micro-C			LH8010	Sharp		
				Z8001	SGS-Thomson			LH8010A	Sharp		
				Z8001A	SGS-Thomson			Multi-Task Support Peripheral, NMOS			
				Z8001B	SGS-Thomson			LH8075	Sharp		
				LH8001	Sharp			Output Interface Unit (with 128 byte FIFO Unit)			
				LH8001A	Sharp			Z8538-FIO	Zilog		
				(Continued)				Real-Time Clock/Calendar (8 and 10 MHz)			
								CA82C55A	Newbridge (3593)		130
								Serial Communications Controller			
								Z8030A	SGS-Thomson		
								Z85C30-SCC	Zilog		
								Z8530-SCC	Zilog		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◇ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Z8000 (Cont'd)				Microcontroller, 16-Bit (A/D, 16K ROM)				Communications, Dual Universal Serial Communications Controller			
Serial I/O Controller				HPC16164 † National				SCN68562 ♦ Signetics (3673)			
Z80A Micro-C				HPC26164 National				Controller, Programmable Interrupt			
Z8030-SCC ♦ SGS-Thomson				HPC36164 National				USC68HC908 Universal (3738)			
LH8030 Sharp				HPC46164 National				Disk, Intelligent Multiple Disk Controller			
LH8030A Sharp				Microcontroller, 16-Bit (ROMless version)				SCN68454 Signetics			
Z8030-Z-SCC ♦ Zilog				HPC16004 † National				Disk, Phase Locked Loop			
Serial/Parallel Combination Controller, NMOS				HPC26004 National				SCB68459 Signetics			
LH8071 Sharp				HPC36004 National				Display Processor			
LH8072 Sharp				HPC46004 National				EF68483 SGS-Thomson			
Universal Peripheral Controller, NMOS				Microcontroller, 16-Bit (16K ROM)				DMA Controller			
LH8093 Sharp				HPC16064 † National				HD68450-10 ♦ Hitachi			
Universal Peripheral Controller, NMOS (6 MHz)				HPC26064 National				HD68450-8 ♦ Hitachi			
LH8093A Sharp				HPC36064 National				68450-10 Micro-C			
				HPC46064 National				68450-8 Micro-C			
				Microcontroller (8K ROM, 256 bytes RAM)				MC68450 Motorola			
8086				HPC16083 † National				SCB68430 ♦ Signetics			
Microprocessor, 16-Bit (10 MHz)				HPC26083 National				DMA Controller, Dual			
SAB80186-1 ♦ Siemens				HPC36083 National				68440-10 Micro-C			
SAB80286-1 ♦ Siemens				HPC46083 National				68440-8 Micro-C			
Bus Controller for SAB80286 Processor (8 MHz)				CMOS Serial Network Interface				MC68440 ♦ Motorola			
SAB82288 Siemens				DP83910 National				EF68440 SGS-Thomson			
Bus Controller for SAB80286 Processor (10 MHz)				MMU, BPU, I/O, and Fault Controller				Dynamic RAM Controller Interface Circuit			
SAB82288-1 Siemens				L64550 ♦† LSI Logic				DP84322 National			
Clock Generator and Interface for SAB80286 Processor (16 MHz)				Serial Network Interface				Error Detection and Correction Circuit			
SAB82284 Siemens				DP8391 National				MC74F2960 Motorola			
SAB82284-1 Siemens				Universal Asynchronous Receiver/Transmitter				Memory Access Controller			
256x8-Bit CMOS Static RAM				INS8250-B ♦ National				SCC68905 ♦ Signetics			
SAE81C52P Siemens				PC16551C ♦ National				SCC68906 Signetics			
				Universal Asynchronous Receiver/Transmitter (with FIFO's, parallel interface and decode logic)				Memory Management Unit			
8096				PC16551C ♦ National				68451-10 Micro-C			
Microcomputer, 232x8 RAM, 10-Bit A/D, IO, 12 MHz				68000				Multi-Function Peripheral			
8096 Intel				Microprocessor				68901 Micro-C			
Microcomputer, 232x8 RAM, 10-Bit A/D, 8Kx8 ROM, I/O, 12 MHz				HD68000-10 Hitachi				MC68901 Motorola			
8396 Intel				MC68000-10 ♦ Motorola				EF68901 SGS-Thomson			
				MC68000-12 ♦ Motorola				MK68901 SGS-Thomson			
9450				MC68000-8 ♦ Motorola				Multibus II Message Passing Coprocessor			
Memory Management Unit				R68000 Rockwell				VL82C389 VLSI Tech			
F9451 ♦† National				EF68000 ♦ SGS-Thomson				Parallel Interface/Timer			
				EF68000-10 ♦ SGS-Thomson				EF68230-10 SGS-Thomson			
16000				EF68000-12 ♦ SGS-Thomson				EF68230-8 SGS-Thomson			
Microprocessor, Enhanced 16-Bit MIL-STD-1750A (CMOS)				EF68000-16 SGS-Thomson				Protocol Controller (X.25)			
P1750AE-30XM ♦† Performance				EF68000-8 ♦ SGS-Thomson				68605-10 Micro-C			
P1750AE-35XM ♦† Performance				SCN68000 ♦ Signetics				68605-12 Micro-C			
P1750AE-40XM ♦† Performance				Microprocessor 8-Bit (bus interface version of MC68000)				MC68605 Motorola			
Microprocessor Hybrid System Module (P1750A MPU, P1753 MMU, and P1754 Processor Interface Circuit)				MC68008 Motorola				RISC Microcontroller, 16-Bit (12/16 MHz, 6/8 MIPS)			
P1757M-20M ♦† Performance				EF68008 SGS-Thomson				UT69000 ♦† UTMC			
P1757M-30M ♦† Performance				Microprocessor 16-Bit (virtual machine version of MC68000)				SCSI Interface Controller			
P1757M-40M ♦† Performance				MC68010 ♦ Motorola				CA53C80 † Newbridge (3593)			
Microprocessor, 16-Bit MIL-STD-1750A (CMOS)				Address Decoder, 68000 Compatible				Serial Communications Controller			
P1750A-20XM ♦† Performance				USC68HC138 Universal (3738)				CA85C30 Newbridge			
P1750A-30XM ♦† Performance				Broadband Interface Controller (IEEE 802.4 Broadband Physical Layer)				Serial I/O			
P1750A-40XM ♦† Performance				MC68184 Motorola				EF68564 SGS-Thomson			
Microcontroller Emulator (for the HPC16083, 8K EPROM, 256x8 RAM)				Bus Arbitration Module				MK68564 SGS-Thomson			
HPC46083MH National				68452 Micro-C				Token Bus Controller (IEEE 802.4 Media Access Control sublayer)			
Microcontroller (external ROM)				Carrierband Modem (IEEE 802.4 Phase Coherent Physical Layer)				68824-10 Micro-C			
HPC16003 † National				MC68194 Motorola				68824-12 Micro-C			
HPC26003 National				CMOS 16/32-Bit Microprocessor				MC68824 Motorola			
HPC36003 National				SCC68070 ♦ Signetics				Video Display Generator			
HPC46003 National				Communications, Asynchronous Communications Adapter Interface (ACIA)				MC6847 Motorola			
Microcontroller with HDLC Controller				USC68HC551 Universal (3738)				VMEbus Controller (BUSCON)			
HPC16400 National				Communications, Programmable Communications Interface				SCB68172 ♦ Signetics			
HPC36400 National				68661 Micro-C				Dual UART			
HPC46400 National				MC2661 Motorola				68681-1 Micro-C			
Microcontroller, 16-Bit (A/D, ROMless version)				MC68661 Motorola				MC68681 Motorola			
HPC16104 † National				Communications, Dual Asynchronous Communications Interface Adapter (DACIA)				SCN68681C ♦ Signetics			
HPC26104 National				R68C552 Rockwell							
HPC36104 National											
HPC46104 National											

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
RTX2000				SCSI Interface Chip				Bus Arbiter (12 MHz)			
Microcontroller, On-Chip Interrupt Controller, Three 16-Bit Timer/Counters, ASIC Bus				Z5380-SCSI				KS82C289-12			
RTX2000				Zilog				Samsung			
RTX2001A				Serial Communications Controller				Bus Arbiter (16 MHz)			
Harris				Z80C30Z-SCC				KS82C289-16			
Harris				Zilog				Samsung			
				Serial Controller Multi-Protocol				Bus Controller.			
				Z8530-SCC				82C288-10			
				Zilog				82C288-10/883			
								82C288-12			
								82C288-12/883			
								Harris			
								† Harris			
								Harris			
								† Harris			
								Bus Controller			
								CA82C88			
								† Newbridge			
								(3593)			
								Bus Controller for 80C286 Processor			
								82C288/883			
								Harris			
								Bus Controller (10 MHz)			
								KS82C288-10			
								Samsung			
								Bus Controller (12 MHz)			
								KS82C288-12			
								Samsung			
								Bus Controller (16 MHz)			
								KS82C288-16			
								Samsung			
								Clock Driver and Ready Interface (for iAPX 286 processors)			
								82284			
								AMD			
								Clock Generator and Driver			
								CA82C84A			
								† Newbridge			
								(3593)			
								Clock Generator and Ready Interface.			
								82C284-10			
								Harris			
								82C284-10/883			
								† Harris			
								82C284-12			
								Harris			
								82C284-12/883			
								† Harris			
								Clock Generator and Ready interface			
								82C284-10			
								Intel			
								82C284-12			
								Intel			
								82C284-6			
								Intel			
								82C284-8			
								Intel			
								Clock Generator (10 Mhz)			
								KS82C284-10			
								Samsung			
								Clock Generator (12 MHz)			
								KS82C284-12			
								Samsung			
								Clock Generator (16 MHz)			
								KS82C284-16			
								Samsung			
								CPU Controller			
								82C211			
								Chips&Tech			
								82C221			
								Chips&Tech			
								Data Address Buffer			
								82C215			
								Chips&Tech			
								Data Bus Buffer and Parity Generator, for PC/AT			
								82A205			
								Chips&Tech			
								DMA Controller			
								82C223			
								Chips&Tech			
								DMA Coprocessor			
								SAB82257			
								Siemens			
								SAB82257-6			
								Siemens			
								SAB82258-1			
								Siemens			
								EMS Mapper Chip			
								82C631			
								Chips&Tech			
								High Address Bus Buffer and Port, for PC/AT			
								82A203			
								Chips&Tech			
								IBM PC/AT Compatible Chip Set (replaces major logic functions of all microprocessor peripherals)			
								POACH/AT			
								ZyMOS			
								IBM PC/AT Compatible Chip Set (replaces most address and data buffers on the AT motherboard)			
								POACH/ATB			
								ZyMOS			
								IBM PC/AT Compatible Chip Set (replaces the major logic functions of the AT motherboard)			
								POACH/ATF			
								ZyMOS			
								IBM PS/2 Model 50/60 Compatible Chipset			
								CHIPS/250			
								Chips&Tech			
								Low Address Bus Buffer and Refresh Counter, for PC/AT			
								82A204			
								Chips&Tech			

TLCS68000				16/32 Bit				70			
Microcomputer (DMA controller, transfer rate up to 5 MB/s)				TMP68450				Toshiba (3732)			
Microcomputer (dual direct memory address, async., block transfer)				TMP68440				Toshiba (3732)			
Microcomputer (multifunction peripheral, 8 I/O, timers, sync/async)				TMP68901				Toshiba			
Microcomputer (32-Bit CPU, UNIX compatible)				TMP68000				Toshiba (3732)			
Microcomputer (32-Bit CPU, UNIX compatible, virtual memory)				TMP68010				Toshiba (3732)			
Microcomputer (68000 bus compatible, parallel interface timer)				TMP68230				Toshiba (3732)			
TMS380				16000				35			
Token-Ring COMMprocessor (16 Mb/s)				TMS380C16				° TI			
Token-Ring LAN Communications Processor (Part of TMS380 Chip Set)				TMS38010				TI			
Token-Ring LAN Protocol Handler (Part of TMS380 Chip Set)				TMS38020				TI			
Token-Ring LAN Ring Interface Controller (Part of TMS380 Chip Set)				TMS38052				TI			
Token-Ring LAN Ring Interface Transceiver (Part of TMS380 Chip Set)				TMS38051				TI			
Token-Ring LAN System Interface (Part of TMS380 Chip Set)				TMS38030				TI			
Transputer				32000				40			
Link Adapter, 10 or 20 Mb/s				IMSC011				° SGS-Thomson			
IMSC012				° SGS-Thomson				45			
Link Adaptor, 10 or 20 Mb/s (for Transputer family)				IMSC011-20				° SGS-Thomson			
IMSC012-20				° SGS-Thomson				50			
Transputer, 16-Bit (10 MIPs performance, 4 Kbytes RAM on chip)				IMST222M				°† SGS-Thomson			
Transputer, 16-Bit (17.5 MHz, 4K SRAM)				IMST222-17				° SGS-Thomson			
IMST222-17M				°† SGS-Thomson				55			
IMST225-17				° SGS-Thomson				60			
IMST225-17M				°† SGS-Thomson				65			
Transputer, 16-Bit (20 MHz, 4K SRAM)				IMST222-20				° SGS-Thomson			
IMST225-20				° SGS-Thomson				70			
IMST225-20M				°† SGS-Thomson				75			
Transputer, 16-Bit (25 MHz, 4K SRAM)				IMST225-25				° SGS-Thomson			
Transputer, 16-Bit (30 MHz, 4K SRAM)				IMST225-30				° SGS-Thomson			
Z8000				80286				80			
Counter/Timer, Parallel I/O				Z8536-CIO				° Zilog			
DMA Transfer Controller				Z8516-DTC				Zilog			
General Logic Unit (Interfaces the Z80 to a system environment) Z80C20-Z-GLU				Zilog				85			
SCSI Interface Chip				Zilog				90			
Serial Communications Controller				Zilog				95			
Serial Controller Multi-Protocol				Zilog				100			
LAN Coax Receiver Interface				DP8392				National			
Microprocessor, 32-Bit, CMOS, with 16-Bit External Data Bus				NS32C016				° National			
Microprocessor, 32-Bit, CMOS, with 32-Bit External Data Bus				NS32C032				° National			
Microprocessor, 32-Bit, with Virtual M				NS32332				° National			
Microprocessor, 32-Bit, with 32-Bit External Data Bus				NS32032				° National			
Microprocessor, 32-Bit, with 8-Bit External Data Bus				NS32008				° National			
Arithmetic, Floating Point Processor				NS32081				° National			
DMA Controller				NS32203				National			
Floating Point Unit				NS32081-10				° National			
NS32081-15				° National				85			
NS32081-6				° National				90			
Floating Point Unit (15 MHz)				NS32381-15				° National			
Floating Point Unit (16 or 32-bit slave protocol support)				NS32381				° National			
Floating Point Unit (20 MHz)				NS32381-20				° National			
Interrupt Control Unit				NS32202				° National			
Memory Management Unit				NS32082				° National			
NS32382				° National				95			
NS32382-10				° National				100			
NS32382-15				° National							
Serial Communications Controller				CA85C30				Newbridge			
Timing Control Unit				NS32C201				° National			
NS32201				° National							
Microprocessor, 16-bit (with memory management, 10 MHz)				SAB80286-1				Siemens			
Microprocessor, 16-bit (with memory management, 12 MHz)				SAB80286-12				Siemens			
Microprocessor, 16-bit (with memory management, 16 MHz)				SAB80286-16				Siemens			
Microprocessor, 16-Bit (with memory management, 8 MHz)				SAB80286				Siemens			
Address/Data Buffer				82C225				Chips&Tech			
Advanced Memory Controller				82C222				Chips&Tech			
Asynchronous Communications Element				CAB82C50A				Newbridge			
Bus Arbiter (synchronizes 80286 with Multi-Master bus.)				82289				Intel			
Bus Arbiter (10 MHz)				KS82C289-10				Samsung			

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
80286 (Cont'd)				RISC Microprocessor, 32-Bit	SABR2000A	◊ Siemens		Microprocessor, 32-Bit. See 16-Bit series for additional system components.	MC68020	◊ Motorola	
Memory Interleave Controller	82C212	Chips&Tech		SABR3000	◊ Siemens			DRAM Controller	KS84C31	◊ Samsung	
Micro-Channel Controller I	82C611	Chips&Tech		SABR3000A	◊ Siemens			KS84C32	◊ Samsung		
Micro-Channel Controller II	82C612	Chips&Tech		RISC Floating Point Coprocessor	SABR2010A	◊ Siemens	35	Floating Point Coprocessor	68882	◊ Krueger (3548)	75
Multibus II Message Passing Coprocessor for 80186/80286/80386 and 6800	VL82C389	VLSI Tech		SABR3010	◊ Siemens			Floating-Point Co-processor	68881	Krueger (3548)	
Numeric Coprocessor (12 MHz)	80EC287-12	◊ AMD	5	SABR3010A	◊ Siemens			68881-12	Micro-C		
Numeric Coprocessor, 80-Bit (operates at up to 20 MHz)	IIT-2C87	◊ Int Info Tech		SPARC ECL Floating Point ALU (32/64-Bit)	B5120	Bipolar		68881-16	Micro-C		
Numeric Coprocessor, 80-Bit (10 MHz)	80C287-10	AMD		SPARC ECL Floating Point Controller	B5100	Bipolar		68881-20	Micro-C		
Numeric Coprocessor, 80-Bit (12 MHz)	80C287-12	AMD		SPARC ECL Floating Point Multiplier/Divider (32/64-Bit)	B5110	Bipolar	40	MC68881	◊ Motorola	80	
PC/AT Chip Set (TOPCAT 286/386sx)	VL82C286-SET	VLSI Tech		SPARC ECL Integer Unit Microprocessor	B5000	Bipolar		Paged Memory Management Unit	68851-12	Micro-C	
PC/AT Chip Set (TOPCAT 386DX)	VL82C386-SET	◊ VLSI Tech	10	SPARC ECL Register File, Five-Port (64x18-Bit)	B5210	Bipolar		68851-16	Micro-C		
PC/AT Compatible Chipset	CS8220	◊ Chips&Tech		32000				MC68851	◊ Motorola		
PC/AT Compatible Combination Chip (20 MHz CMOS)	VL82C106	VLSI Tech		Microprocessor	NS32016	◊ National		VMebus Advanced Interface Control Circuit (ACC)	CA91C014	† Newbridge (3593)	
Programmable DMA Controller	CA82C37A	† Newbridge (3593)		Microprocessor (full 32-Bit architecture)	NS32532-20	◊ National	45	CA91C014	† Newbridge (3593)	85	
Programmable Interrupt Controller	CA82C59A	† Newbridge (3593)		NS32532-30	◊ National			VMebus interface chip-digital address register file	CA91C015	† Newbridge (3593)	
Programmable Interval Timer	CA82C54	† Newbridge (3593)	15	Microprocessor, 32-Bit (on chip MMU, instruction and data caches)	NS32532	◊ National		CA91C015	† Newbridge (3593)		
Programmable Peripheral Interface	CA82C55A	† Newbridge (3593)		Microprocessor, 32-Bit RISC (CMOS)	PR3000-16XC	◊ Performance		80000			
RAM/ROM Decode, I/O Control, for PC/AT	82C202A	Chips&Tech		PR3000-16XM	◊ Performance			Microprocessor	Z80000-CPU	Zilog	
SCSI Interface Controller	CA53C80	† Newbridge (3593)		PR3000-20XC	◊ Performance		50	Microprocessor, 32-Bit	Z80320	Zilog	
Serial Communications Controller	CA85C30	Newbridge		PR3000-20XM	◊ Performance			80386			
VM85C30	† VLSI Tech		20	PR3000-25XC	◊ Performance			Microprocessor	80386-16	◊ Intel	90
Serial Controller Interface	CA82C52	Newbridge (3593)		PR3000-25XM	◊ Performance			80386-20	◊ Intel		
System Control Chip, for PC/AT	82C201	Chips&Tech		Asynchronous Communications Element with FIFOs	NS16550	National		8086-20	◊ Intel		
System Peripheral Chip	82C226	◊ Chips&Tech		Direct Memory Access Controller	NS32202-10	◊ National		Advanced DMA Controller	82C223	◊ Chips&Tech	
Single Chip AT Mid-Range Performance Chip - Desktop (SCAMP-DT)	VL82C311	◊ VLSI Tech		Floating Point Unit	NS32381-15	◊ National	55	Advanced Page/Interleaved Memory Controller	82C322	◊ Chips&Tech	
Single Chip AT Mid-Range Performance Chip - Laptop (SCAMP-LT)	VL82C310	◊ VLSI Tech	25	NS32381-20	◊ National			AT/386 Chipset	CS8230	◊ Chips&Tech	95
286/NEAT Chipset	KS82C201	◊ Samsung		NS32381-25	◊ National			CS8231	◊ Chips&Tech		
KS82C202	◊ Samsung			NS32381-30	◊ National			CS8232	◊ Chips&Tech		
KS82C204	◊ Samsung			Floating Point Unit (15 MHz)	NS32181-15	National		Cache Controller (included with CS831)	82C307	◊ Chips&Tech	
KS82C205	◊ Samsung			NS32181-20	National		60	Cache/DRAM Controller (32-Bit)	82C327	◊ Chips&Tech	
32 Bit				Floating Point Unit (20 MHz)	NS32181-20	National		Clock Generator	82384	Intel	100
32				Floating Point Unit (25 MHz)	NS32181-25	National		Control Signal Buffer	82C306	◊ Chips&Tech	
Microprocessor (32-bit RISC)	VL86C010	VLSI Tech		High Performance 32-Bit Embedded System Processor	NS32GX32-30	National		Data Buffer	VL82C332	VLSI Tech	
RISC Microprocessor, Enhanced	VL86C020	◊ VLSI Tech	30	High-Performance 32-Bit Embedded System Processor	NS32GX32-20	National		Data/Buffer Controller	82C325	◊ Chips&Tech	
				NS32GX32-25	National			Data Buffer (two included in CS8232-16)	82C305	◊ Chips&Tech	
				MicroCMOS Programmable 1M Dynamic RAM Controller/Driver	NS32CG821	National	65	DMA Controller	82258	Intel	105
				Microprocessor (full 32-Bit architecture)	NS32532-25	◊ National		8237	◊ Intel		
				Universal Asynchronous Receiver/Transmitter (with FIFOs)	16550	Micro-C		Enhanced Graphics Controller	82C435	Chips&Tech	
				NS16550A	National		70	Floating Point Processor	80287	Intel	
				NS16550AF	National			80387	Intel		
				Dual Universal Asynchronous Receiver/Transmitter with FIFOs	NS16C552	National		Graphics Processor	82786	Intel	110
				68000							
				Microprocessor, 16/32-Bit	TS68000	SGS-Thomson					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
80386 (Cont'd)				Peripheral Controllers							
High Address Buffer	82C303	◊ Chips&Tech		Microprocessor Bus Controller	CAB2C88	† Newbridge (3593)	40	Bus Controller for SAB80286 Processors	SAB82288	Siemens	75
IBM PS/2 Model 70/80 Compatible Chipset	CHIPS/280	◊ Chips&Tech		Microcontroller, Mask Programmable ROM (8Kx8)	SAB80515	Siemens		Bus Controller for 80C286	82C288	† Harris	
ISA Bus Controller	VL82C386	VLSI Tech		Microcontroller, RAM and I/O Facilities	SAB80535	Siemens		Bus Controller (8 MHz)	KS82C88-8	Samsung	
LAN Processor	82586	Intel	5	Microcontroller, 4-Bit	KS56000	◊ Samsung		Bus Controller (10 MHz)	KS82C88-10	Samsung	
	82588	Intel		Address Bus Buffer Controller	82B305	Chips&Tech		Bus Extender/Repeater	N8X41	Signetics	
	82586	◊ Krueger		Advanced Peripheral Interface Controller (dual channel)	SAB82C250	Siemens	45	Bus Interface Controller, Programmable	5CBIC	Intel	80
LCD/CRT Controller	82C425	◊ Chips&Tech		Advanced Peripheral Interface Controller (single channel)	SAB82C251	Siemens		Cable Driver/Receiver, SCSI Interface for MC68HC99	MC6898	Motorola	
Low Address Buffer	82C304	◊ Chips&Tech		Analog Data Separator Support Circuit (ADSSC)	HDC9223	SMC		Cache Controller	UM82152	◊ UMC	
Micro-Channel/80386 CPU Controller	82C321	◊ Chips&Tech		Arithmetic Processor, Floating Point	MSM6992	OKI (3606)		Cache Controller and Memory Management Unit (for SPARC architecture)	CY7C604A	* Cypress	
Numeric Coprocessor, 80-Bit (available at 16, 20, 25, and 33 Mhz)	IIT-3C87	Int Info Tech	10						CY7C605A	Cypress	
	IIT-3C87SX	◊ Int Info Tech		Asynchronous Communication Element	UM8250A	UMC		Cache Memory Controller	82385	Krueger	85
Programmable Interrupt Controller	8259	* Intel			UM8250B	UMC		CHIPSLink Protocol Controller	82C570	Chips&Tech	
System Controller/Data Buffer	VL82C320	VLSI Tech		Asynchronous Communication Element w/16 Bit FIFO	UM82550	◊ UMC		Click Generator and Ready Interface for 80C286Co	82C284	Harris	
System Peripheral Chip	82C226	◊ Chips&Tech		Asynchronous Communications Controller	16450	Krueger (3548)		Clock Generator and Driver	CA82C84A	† Newbridge (3593)	
VGA Bus Interface	82C442	◊ Chips&Tech	15		16450	Micro-C					
VGA Chipset	CS8245	◊ Chips&Tech			NS16450	National		Clock Generator (8 MHz)	KS82C84A-8	Samsung	
386SX Cache Controller Chip for 286 ATs and PS/2s (requires 386SX CPU and Cache RAM)	SY300SX	Nexel			SCN2641	◊ Signetics	55	Clock Generator (10 MHz)	KS82C84A-10	Samsung	90
386SX Cache Controller Chip for 386SX Systems (16/20/25 Mhz)	SY380SX	Nexel		Asynchronous Communications Controller, Intelligent Octal Channel	CL-CD180	Cirrus (3429)		Clock Timer Chip (4 MHz)	MK3801-4	SGS-Thomson	
Transputer				Asynchronous Communications Controller (8 MHz)	KS82C50-8	Samsung		Color Graphics and Monochrome Adapter Host Interface Chip	NCR72C81	◊ NCR	
Processor, Memory, Communications.	Transputer	SGS-Thomson		Asynchronous Communications Controller (10 MHz)	KS82C50-10	Samsung		Color LCD Interface Controller Chip	CL-GD6340	◊ Cirrus	
Programmable Link Switch (32-way crossbar switch for Transputer family)	IMSC004-20	◊* SGS-Thomson	20	Asynchronous Communications Element	82C50	† SMC		Color/Monochrome Attributes Controller	SCB2675	◊ Signetics	
Transputer, 32-Bit (10 MIPS performance, 4 Kbytes RAM on chip)	IMST800M	*† SGS-Thomson		Asynchronous SCSI Interface (ASI)	DP5380	National		Color Palette With Triple 6-Bit DAC	UM70C171	UMC	95
Transputer, 32-Bit (17.5 Mhz, 4K SRAM)	IMST425-17	* SGS-Thomson		Asynchronous Serial Communication Controller	Z8531	◊* SGS-Thomson		Communication Controller, LAPD Network Protocol	μPD72305	◊ NEC	
	IMST425-17M	◊*† SGS-Thomson			Z8531A	◊*† SGS-Thomson		Communication Interface Programmable	2661	Micro-C	
Transputer, 32-Bit (17.5 Mhz, 4K SRAM, 64-bit FPU)	IMST800-17	* SGS-Thomson		Asynchronous Serial Communications Controller	SCC	† SMC			2661-1	Micro-C	
	IMST800-17M	◊*† SGS-Thomson		AT to ESDI Interface (ATI)	MSD95C15	◊ SMC			SCN2661A	◊ Signetics	
	IMST805-17	* SGS-Thomson	25	Austek Cache Interface	UM82C389	◊ UMC	65		SCN2661B	◊ Signetics	100
	IMST805-17M	◊*† SGS-Thomson		Bargraph and Numeric Display Controller (vacuum fluorescent or LED)	10951	Rockwell			SCN2661C	◊ Signetics	
Transputer, 32-Bit (20 Mhz, 4K SRAM)	IMST425-20	◊* SGS-Thomson		Battery Fast Charge Controller and Discharge Monitor	bq2001	◊ Benchmarq		Communications, Advanced Multi-Protocol Serial Controller (HDLC/SDLC, bisynchronous/asynchronous with four baud rate generators)	μPD72001	NEC	
	IMST425-20M	◊*† SGS-Thomson		BITBLT Processing Unit (BIT boundary Block Transfer)	DP8511	National	30	Communications, Enhanced Programmable Communications Interface (EPCI)	MC2661A	Motorola	
Transputer, 32-Bit (20 Mhz, 4K SRAM, 64-bit FPU)	IMST800-20	* SGS-Thomson		Buffer Controller, Dual-Port (256 to 64K direct addressing)	AIC300	Adaptec			MC2661B	Motorola	
	IMST801-20M	◊*† SGS-Thomson			AIC301	Adaptec			MC2661C	Motorola	105
	IMST805-20	* SGS-Thomson		Buffer Manager with ECC	9802A	◊ Stac		Communications Interface, Programmable	26C61	† SMC	
	IMST805-20M	◊*† SGS-Thomson		Bus Arbiter for SAB80286 Processor Family	SAB82289	Siemens		Communications, Local Area Network (OmniNet)	μPD72105	NEC	
Transputer, 32-Bit (25 Mhz, 4K SRAM)	IMST425-25	◊* SGS-Thomson		Bus Arbitration Module	68452	Micro-C	70	Communications, Multi-Protocol Serial Controller (HDLC/SDLC, bisynchronous/asynchronous)	7201	Micro-C	
Transputer, 32-Bit (25 Mhz, 4K SRAM, 64-bit FPU)	IMST800-25	◊*† SGS-Thomson	35	Bus Compatible Digital PWM for Direct Control of a Power H-Bridge (provision for dead time, output protection)	IXDP610	IXYS			μPD7201A	NEC	110
	IMST805-25	◊* SGS-Thomson							SAB7201A	Siemens	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				CRT Data Row Buffer				CRT, Video Attributes Controller			
Communications, TWINAX Controller	52C50	† SMC		CRT9006-135	SMC			CRT9041A	SMC		90
Controller, FDC (floppy disk controller)	TC8565AF	Toshiba (3735)		CRT9006-83	SMC		45	CRT9041B	SMC		
	TC8565AP	Toshiba (3735)						CRT9041C	SMC		
Controller (for 4-Bit microcontroller)	BM1020	Toshiba		CRT, Double Row Buffer (RAM-based buffer that appears to the system as two octal shift registers of dynamically variable length)				CRT Video Attributes Controller (graphic logic, attributes logic, data and attributes latches, cursor control and shift register)			
Controller, Hard Disk (ST406/512 format)	TMP280CA7P	Toshiba	5	CRT9212	SMC			CRT9021B	SMC		
	UM83C001	UMC		CRT9212H	STC			CRT Video Attributes Controller/Video Generator (video shift register, horizontal and vertical retrace blanking, graphics generation, attributes buffer)			
Controller, IBM System/3X Interface Controller	COM52C50	◊ SMC		CRT, Flat Panel/CRT VGA Controller				CRT8021	SMC		
Controller Programmable	AM9519A	AMD		CL-GD610	◊ Cirrus			CRT8021-003	SMC		
	CY750	Cybernetic		CL-GD620	◊ Cirrus			CRT, Video Controller, composite output			
Counter/Timer, Parallel I/O	Z80-CIO	Micro-C		CRT, Graphic Display Processor				6560	Commodore		95
	Z8536	◊‡ SGS-Thomson		EF9365	SGS-Thomson		50	6561	Commodore		
	Z8536A	◊‡ SGS-Thomson		EF9366	SGS-Thomson			6567	Commodore		
	Z8536-CIO	◊‡ Zilog	10	EF9367	SGS-Thomson			6569	Commodore		
CPU/Bus Controller (part of PC-AT chipset)	SAB82C211	◊ Siemens		CRT, Graphics Color Palette (video DAC and 256x8 color map)				6572	Commodore		
CRT, Advanced Graphics Display Controller	μPD72120	◊ NEC	15	AM8151C	AMD			6573	Commodore		100
CRT, Advanced Terminal Logic Controller	CRT92C07	SMC		CRT Graphics Controller				8360	Commodore		
CRT, Advanced Video Display Controller	SCN2674	◊ Signetics		μPD7220A	NEC		55	8365	Commodore		
CRT, Bus Interface for EGA Controllers	82A436	Chips&Tech		μPD7220A-1	NEC			8366	Commodore		
CRT, Color/Monochrome Attributes Controller	SCB2675	◊ Signetics		μPD7220A-2	NEC			8562	Commodore		
CRT, Color Video Display Generator, Videotext and Teletext. See also Telecommunications Circuits.	R6549	Rockwell	20	CRT, Graphics Display Controller				8564	Commodore		105
CRT Controller	8276	Intel		82720	Intel		60	8565	Commodore		
	IMI6845	◊‡ IMI		μPD7220A	NEC			8566	Commodore		
	6845	Krueger		CRT7220A	SMC			8569	Commodore		
	9007	Krueger		CRT7220A-1	SMC			CRT Video Controller, digital RGB output			
	MC6845	◊ Motorola	25	CRT7220A-2	SMC			8563	Commodore		110
	NCR7250	◊ NCR						8568	Commodore		
	R6545	Rockwell		CRT Preamplifier and Driver				CRT, Video Data Serializer			
	68C45	† SMC		LH2440	National			AM8177	AMD		
	SMJ34061	† TI		LH2440A	National			CRT, Video Display Generator, Reads Data from Memory to Produce Composite Video Signal, Internal Display Memory Mux			
	TMS34061	◊ TI	30	EF9364	SGS-Thomson			MC6847	Motorola		
	TC8505AF	Toshiba (3735)		CRT Processor				CRT, Video Display Processor			
	TC8505AP	Toshiba (3735)		8275	Intel		65	TMS9118	TI		
	VL68C45R	VLSI Tech		WD8275	Western			TMS9128	TI		115
	VL68C45S	VLSI Tech		CRT, Programmable Video Timing Controller				TMS9129	TI		
	WD8276	Western	35	SCN2672A	◊ Signetics			CRT Video Display-Controller Video Generator			
CRT Controller, CGA (for CRT/LCD display)	82C426	Chips&Tech		CRT, Raster Operations Device				CRT8002	SMC		
CRT Controller For CGA	VG-86C14	◊ Vadem		VL16160	VLSI Tech			CRT, Video Interface Controller			
CRT Controller For MDA, MGA, CGA	VG-86C16	◊ Vadem		CRT (RGB video DAC)				82731	Intel		70
CRT Controller, Video Engine for Windows (127 independent Windows per screen)	CRT97C11	SMC		RGBDAC8E	Adv Analog			CRT, Video Palette (color lookup table and video DAC)			
CRT Controller (4 MHz)	KS68C45-4	Samsung	40	VDAC444	Adv Analog			TMS34070	◊ TI		
CRT Controller (6 MHz)	KS68C45-6	Samsung		BT101	Brooktree			CRT, Video Processor and Controller			
CRT Controller, 3.7 MHz Display Operation (TTL compatible, on-screen, line bufferless refreshing)	GM6845S	GoldStar		BT101K30	Brooktree		75	CRT9007A	SMC		120
CRT Cursor Controller	BT431	Brooktree		BT102	Brooktree			CRT9007A1	SMC		
				BT103	Brooktree			CRT9007A2	SMC		
				BT103KC30	Brooktree			CRT9007A	STC		
				BT103K30	Brooktree			CRT9007B	STC		
				BT109	Brooktree			CRT9007C	STC		
				SCD6038	STC			CRT, Video System Controller (See 8052 CRT Controller)			
				CRT (RGB video DAC and 16x12 RAM)				AM8152AC	AMD		125
				BT450	Brooktree		80	AM8152AM	† AMD		
				BT454	Brooktree			CRT, Video Terminal Logic Controller			
				CRT (RGB video DAC and 256x12 RAM)				CRT9028	SMC		
				BT451	Brooktree			CRT9053	◊ SMC		
				CRT (RGB video DAC and 256x24 RAM)				CRT9128	SMC		130
				BT453	Brooktree			CRT9153	◊ SMC		
				CRT Terminal Controller				CRT Video Timer-Controller			
				NS455	National			CRT5027	SMC		
				CRT Text Coprocessor				CRT Video Timer-Controller, Line Lock Feature			
				82730	Intel			CRT5057	SMC		
				CRT, TV-CRT Processor; Performs Text Refresh, Character Writing and Cursor Management on TV Screen; 1.6 MHz Clock Rate (typ.)				CRT Video Timer-Controller, Preprogrammed			
				SFF96364	SGS-Thomson		85	CRT5047	SMC		
				CRT, TV-CRT Processor; 96364 with External Sync				CRT Video Timer-Controller, ROM Programmed			
				SFF96366	SGS-Thomson			CRT5037	SMC		
				CRT, VGA Bus Interface Controller				CRT, Quad Row Buffer (part of CRT9007 family)			
				82C442	Chips&Tech			CRT94C12	SMC		135
				CRT, VGA Single-Chip Controller				Data/Address Buffer (part of PC-AT chipset)			
				82C441	Chips&Tech			SAB82C215	◊ Siemens		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Driver/Receiver for Disk Head Amplifier	MB4316	Fujitsu		Ethernet Local Area Network Controller	COM82C501	SMC	
				DUART	TMP68681P	Toshiba		COM82C502	SMC		
Data Bit Processor	CT1555	GEC Plessey						COM82586	SMC		
	CT1608	GEC Plessey		Dynamic Memory Controller (for 256K DRAMs)	AM2968A	AMD		Ethernet Manchester Code Converter	CS8023A	Crystal	95
Data Bus Buffer Controller	82A303	Chips&Tech						8020	SEEQ		
	82A304	Chips&Tech		Dynamic Memory Controller, 1 Megabit	AM29368	AMD		8023A	SEEQ		
Data Separator (up to 25 Mbps, 2,7 RLL)	AIC6225	Adaptec		Dynamic RAM Controller (256K)	VL4502	VLSI Tech	50	Ethernet Serial Interface	COM82C501AD	SMC	
Differential Output Video Clock Generator, 140 MHz	ICS1560	IntCirSys		Embedded Controller 6800 Based	TMP6830SF	Toshiba		FDMC (Floppy Disk Mechanism Control, 3.5")	TC8601F	Toshiba	
					TMP68303F	Toshiba		TC8602F	Toshiba		
Differential Output Video Clock Generator, 185 MHz	ICS1561	IntCirSys		Emulator (for TLCS47 series)	BM47212	Toshiba		FDMC (Floppy Disk Mechanism Control, 5- 1/4")	TC8680F	Toshiba	100
					BM47213	Toshiba					
Differential Output Video Clock Generator, 235 MHz	ICS1562	IntCirSys			BM47214	Toshiba		Floppy Disk Controller	MB89312	Fujitsu	
Direct Memory Access Controller	AM9517A-4	AMD			BM47215	Toshiba					
	NS32203-6	National			BM47216	Toshiba		Floppy Disk Controller	82072	Intel	
	NS32203-8	National			BM47218	Toshiba					
	μPD71071	NEC			BM47219	Toshiba		Floppy Disk Controller	8473	Krueger	
Direct Memory Access Controller (dual)	68440-10	Micro-C		Emulator (for TLCS470 series)	BM47C800	Toshiba	60	765-08	Micro-C		105
	68440-8	Micro-C			BM47C820	Toshiba		FDC37C65B	SMC		
	MC68440	Motorola			BM47C860	Toshiba		FDC72C65	SMC		
	EF68440	SGS-Thomson			BM47C870	Toshiba		FDC72C66	SMC		
Direct Memory Access Controller (programmable)	8237	Intel		Encoder/Decoder, MFM Format	AIC250	Adaptec	65	FDC765A-2	SMC		
	8257	Intel						FDC92C81	SMC		
	71055	Micro-C		Encoder/Decoder, 2,7 RLL Format	AIC270	Adaptec		UM8387	UMC		110
	μPD71055	NEC						UM8388	UMC		
	SAB8237A	Siemens		Enhanced Asynchronous SCSI Interface (EASI)	DP8490	National		UM8398	UMC		
	SAB8237A-5	Siemens						Z765A-FDC	Zilog		
Direct Memory Access (DMA) Controller, CMOS	P1755-XM	Performance		Enhanced Character Generator For MDA, MGA	VG-23C07	Vadem		Floppy Disk Controller, Data Separator	FDC9268	SMC	
Disk, Hard Disk Controller	μPD7261A	NEC		Enhanced PCI	TMP68661P	Toshiba		Floppy Disk Controller (Digital Data Separator), 16 MHz	VL1772-16	VLSI Tech	115
Display Controller, 4-Character Alphanumeric	MM74C956	National		Enhanced Programmable Communications Interface (EPCI)	IM26C61	Harris		Floppy Disk Controller (for PC/AT or PS/2)	PC8477	National	
					IM26C62	Harris					
Display Controller, 14 to 18 Segment Vacuum Fluorescent Displays (16 characters)	10937	Rockwell			SCN68661B	Signetics		Floppy Disk Controller (for PC/XT, AT and PS/2)	DP8473	National	
	10957	Rockwell			SCN68661C	Signetics					
Display/Terminal Management Processor	NS405	National		Enhanced Terminal Logic Controller	CRT93C07	SMC		Floppy Disk Controller for Sony Format	μPD7265	NEC	
DMA, Advanced Coprocessor for 16-Bit Microcomputer Systems	SAB82258	Siemens							R6265	Rockwell	
DMA Controller, Programmable	8237A	Krueger		Enhanced VGA Compatible Graphics Chip Set (graphics attributes controller)	CL-GD510A	Cirrus	75	Floppy Disk Controller/Formatter	DP8472	National	120
	8257	Krueger							DP8474	National	
	M5M82C37A	Mitsubishi		Enhanced VGA Compatible Graphics Chip Set (sequencer/CRT controller)	CL-GD520A	Cirrus		Floppy Disk Controller/Formatter (IBM 3740 and System 34)	FDC9793	SMC	
DMA Controller (5 MHz)	KS82C37A-5	Samsung							FDC9797	SMC	
DMA Controller (8 MHz)	KS82C37A-8	Samsung		Enhanced Video Clock Generator	ICS1494	IntCirSys		Floppy Disk Controller/Formatter (single and double density)	MB89311	Fujitsu	125
DMA Controller (10 MHz)	KS82C37A-10	Samsung							1772-02-02	Micro-C	
DMA Controller, 32-Bit	MB92411	Fujitsu		Error Detection and Correction Circuit (CMOS cascaded 32-bit)	AM29C660	AMD			1797	Micro-C	
Dot Matrix Display Controller (vacuum fluorescent or LED)	10938	Rockwell							1797-02-16	Micro-C	
	10939	Rockwell		Error Detector and Correction Unit	54HST603	GEC Plessey			SAB2793B	Siemens	
	10941	Rockwell							SAB2797B	Siemens	
	10942	Rockwell		ESDI Disk Controller	MSD7262	SMC	80		FDC1791-02	SMC	130
	10943	Rockwell							FDC1793	SMC	
Dot Matrix LCD Controller/Driver, Intelligent	μPD7227	NEC		ESDI Winchester Disk Controller	WD5020-10	Western			FDC1793-02	SMC	
	μPD7228	NEC							FDC1794	SMC	
DRAM Controller (25 MHz)	KS84C21-25	Samsung		Ethernet Data Link Controller	AM7990	AMD	85		FDC1795-02	SMC	135
	KS84C22-25	Samsung			CS8005	Crystal			FDC1797	SMC	
					MB8795B	Fujitsu			FDC1797-02	SMC	
					7990-50	Micro-C			VL1772-02	VLSI Tech	
					7990-60	Micro-C			FD1791-02	Western	
					7990-70	Micro-C			FD1793-02	Western	
					7990-80	Micro-C			FD1795-02	Western	140
					8003	SEEQ			FD1797-02	Western	
					8005	SEEQ	90		WD1770	Western	
									WD1772	Western	
									WD1773	Western	
									WD2791-02	Western	145

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Floppy Disk Interface Circuit (for 3.5, 5.25 and 8-inch drives)	FDC92C39	SMC		Hard Disk Pulse Detector	ML8464X DP8464	MicroLinear National	90
Floppy Disk Controller, Head Driver	XR3448	Exar		Floppy Disk Logic Circuit and Stepper Motor Driver	CS279	Cherry Semi		Hard Disk Read/Write Controller with Internal Damping Resistor (6 channel)	XR501R-6 XR501R-8 XR510R	Exar Exar Exar	
MC3469	Motorola			Floppy Disk Mechanism Control (5 1/4 ")	TC8600F	Toshiba		Hard Disk Read/Write Controller (4 channel)	XR510	Exar	95
MC3471	Motorola			Floppy Disk Read Amplifier System	CS3470A	Cherry Semi	55	Hard Disk Read/Write Controller (6 channel)	XR501-6	Exar	
Floppy Disk Controller (IBM PC/AT recording format)	μPD72064	NEC		Floppy Disk Read/Write Circuit, 2-Channel	CS570	Cherry Semi		Hard Disk Read/Write Controller (8 channel)	XR501-8	Exar	
Floppy Disk Controller, IBM PC/XT/AT, PS/2 Compatible	GM82C765B	GoldStar	5	Floppy Disk Subsystem Chip	WD37C65B/A	Western		Hard Disk Read/Write Interface with Internal Damping Resistors (2 heads)	XR117R-2C XR117R-4C XR117R-6C	Exar Exar Exar	100
Floppy Disk Controller/Interface (single and double density)	FDC9266	SMC		Floppy Disk Support Device	WD16C92A	Western		Hard Disk Read/Write Interface (2 heads)	XR117-2C	Exar	
Floppy Disk Controller, Programmable	8271	Intel		Floppy Disk Write Amplifier	XR3471	Exar	60	Hard Disk Read/Write Interface (4 heads)	XR117-4C	Exar	
Floppy Disk Controller/Transmitter (IBM 3740 compatible)	MB8866 MB8876A MB8877A 765-092 μPD765A	Fujitsu Fujitsu Fujitsu Micro-C NEC	10	Floppy Disk Write Control	CS3471	Cherry Semi		Hard Disk Read/Write Interface (6 heads)	XR117-6C	Exar	
Floppy Disk Controller/Transmitter, Single Chip	2797-02-05 WD2791 WD2793-02 WD2795-02 WD2797-02	Micro-C Western Western Western Western	15	Floppy/Hard Disk Controller	μPD7260	NEC		Hard Disk Synchronizer	MSD95C90	SMC	
Floppy Disk Controller (with VFO)	TC8566AF	Toshiba	(3735)	Floppy Support Logic	WD1691	Western		Hard/Floppy Disk Controller	HDC7260	SMC	105
Floppy Disk Controller, Single/Double Density	8272A 765A 72065 765 765-092 765-092 μPD72065 μPD765A R6765 FDC765A UM8272A	Intel Krueger Micro-C Micro-C Micro-C Micro-C NEC NEC Rockwell SMC UMC	20	Function Generator, Peripheral Controller	CY360	Cybernetic		HDLC Protocol Controller	MT8952B	Mitel	
Floppy Disk Controller, Single- or Double Density	765-2 μPD765A-2 μPD765B	Micro-C NEC NEC	25	Genlock Signal Processor for VGA	GSP500	IntCirSys		Hercules Color Graphic Adapter Controller	UM487	UMC	
Floppy Disk Controller, Single- or Double-Density (IBM and ECMA formats)	μPD72067	NEC		GPIO Controller	8292 WD9914	Intel Western	65	High Impedance Transceiver for Twisted Pair	HYC9088	SMC	
Floppy Disk Controller, Two-Sided	μPD765A	NEC	35	GPIO, General Purpose Interface Adapter (IEEE 488 bus)	HEF4738	Signetics		I/O Controller (IOC)	VL86C410	VLSI Tech	
Floppy Disk Data Separator	MB4107A μPD71065 μPD71066 SED9420CAC SED9420D FDC9216 FDC9216B UM8326B WD9216-01	Fujitsu NEC NEC S-MOS S-MOS SMC SMC UMC Western	30	GPIO Interface Controller, Intelligent	COM7210	SMC	70	IBM PS/2 Model 30 and Super XT Compatible Chip	82C110	Chips&Tech	110
Floppy Disk Data Separator and Clock Generator	FDC92C38	SMC	45	GPIO Talker/Listener Interface	8291A	Intel		IBM 3274/3276 Compatible COAX Receiver/Transmitter	COM90C84	SMC	
Floppy Disk Data Separator (for 3.5, 5.25 and 8-inch drives)	FDC91C36 FDC92C36	SMC SMC		GPIO Transceiver	8293	Intel		IEEE 802.3 Ethernet Controller	8001	SEEQ	
Floppy Disk Digital Data Separator, Enhanced	WD92C32	Western		Graphic Display Processor	EF9345	SGS-Thomson		Integrated Peripheral Controller	UM82C206	UMC	
Floppy Disk Interface Circuit	μPB9201 FDC9229 FDC9229B	NEC SMC SMC	50	Graphics Display Controller	Z7220A-GDC	Zilog	30	Integrated Peripheral Controller (for PC/AT)	SAB82C206	Siemens	
				Hard Disc Controller	UM83C021	UMC		Intel Cache Interface	UM82C388	UMC	115
				Hard Disc Controller Interface	UM83C022	UMC		Intelligent Multi-Protocol Communications Controller Chip	CL-CD2401	Cirrus (3426)	
				Hard Disk Buffer Controller	SSI32C453	SiliconSys		Intelligent Multi-Protocol Peripheral	CL-CD2400	Cirrus (3426)	
				Hard Disk Controller for PC/XT/AT Computers	CL-SH260	Cirrus		Interface Adapter (asyn. data transfer to 1.5 Mbps)	AIC500	Adaptec	
				Hard Disk Controller, Head Driver	XR117	Exar		Interface Adapter (up to 4 Mbps PC/AT I/O transfers)	AIC560	Adaptec	
				Hard Disk Controller Interface	UM83C003	UMC		Interrupt Controller Programmable	8259A-2 8259A-5	Intel Intel	120
				Hard Disk Controller (ST506/ESMD format)	μPD72061 μPD7261B	NEC NEC	40	Interrupt Controller (8 MHz)	KS82C59A-8	Samsung	
				Hard Disk Data Separator	DP8460 DP8461 SSI32D535 HDC92C26	National National SiliconSys SMC	45	Interrupt Controller (10 MHz)	KS82C59A-10	Samsung	
				Hard Disk Data Synchronizer	DP8451	National		Interval Timer, Programmable, High Performance	71054 μPD71054	Micro-C NEC	125
				Hard Disk Interface Circuit	μPD9306	NEC		Interval Timer (8 MHz)	KS82C54-8	Samsung	
				Hard Disk Pulse Detector	XR541 XR8464B 8464	Exar Exar Krueger					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Manchester Encoder/Decoder (Cont'd)				Modem Circuit, Component Modem (1200 bps)			
Interval Timer (10 MHz)	KS82C54-10	Samsung		MEDM5186	Technitrol			XE1212E	XECOM		85
Keyboard/Display Interface	8279	Intel		MEDM5200	Technitrol			XE1214E	XECOM		
Keyboard Interface Controller	KyBRD	† SMC		MEDM5230	Technitrol			Modem Circuit, Component Modem (2400 bps)			
LCD Alphanumeric Controller/Driver. See also Interface-Display Drivers	μPD7225	◊ NEC		MEDM5300	Technitrol			XE2400A-E	XECOM		
LCD Controller For 640X200, 640X400 CGA/ATT VG-600		◊ Vadem		MEDM5400	Technitrol			Modem Circuit, Error Correcting Modem (2400 bps)			
LCD/CRTC Controller (640X400 dot matrix)	T7779	Toshiba (3735)		MEDM5500	Technitrol			XE2400MNP-E	XECOM		
LCD Windows, Graphics, Text Controller	CY325	◊ Cybernetic		Manchester Encoder/Decoder, Remote Control				Modem Circuit, Modem Development Board (PC card)			
	CY327	◊ Cybernetic		MC145030	Motorola			XE1212MB	XECOM		90
Local Area Network Coax Receiver Interface	S83C92C	◊ Crystal		MAP Broadband Interface Controller (IEEE 802.4 Broadband Physical Layer)	MC68184	Motorola		XE1251	XECOM		
	DP8392	National						XE1253	XECOM		
Local Area Network Communications, Ethernet Serial Interface	82501	Intel		MAP Carrierband Modem (IEEE 802.4 Phase Coherent Physical Layer)	MC68194	Motorola		Modem Circuit, Modem Development Board (stand alone)			
	82586	Intel						XE1214MB	XECOM		
Local Area Network Controller	R68802	Rockwell		MAP Token Bus Controller (IEEE 802.4 Media Access Control sublayer)	68824-10	Micro-C		XE2400MB	XECOM		
	COM90C26	SMC			MC68824	Motorola		Motherboard Clock Generator			
	COM9026	SMC		Memory Controller, Page/Interleave (part of PC-AT chipset)	SAB82C212	◊ Siemens		ICS1694	◊† IntCirSys		
Local Area Network Controller/Transceiver	COM90C62	SMC		Memory Interleaving Controller	82C302	Chips&Tech		Motherland Clock Generator			
Local Area Network Controller/Transceiver for ARCNET with PC/XT Interface and 2Kx8 Dual-Port RAM	COM90C165	SMC		Memory Management Unit	TMP68451C	Toshiba		AV9128	◊ Avaseam		95
	COM90C62I	◊ SMC		Micro Channel Interface Circuit	MC194C18	SMC		AV9129	◊ Avaseam		
Local Area Network Controller/Transceiver/Support Logic	COM90C65	SMC		Micro Channel Memory Controller	EL2010	EdsunLabs		AV9152	◊ Avaseam		
Local Area Network Jitter Attenuator	CS80600	Crystal		Micro Channel Single-Chip Mass Storage Controller	AIC6190	Adaptec		AV9153	◊ Avaseam		
Local Area Network Token Access Controller	WD2840A	Western		Microchannel TO ESDI Interface (MIDAS)	MSD95C10	◊ SMC		Motion Control/Buffer Manager and Read Write Formatter (WD2400 Chip Set)			
Local Area Network Transceiver	COM90C32	SMC		MicroCMOS Programmable 256K/1M/4M Dynamic RAM Controller/Drivers	DP8420A	National		WD24C02	Western		
	COM9032	SMC			DP8421A	National		Motor, Intelligent Stepper Motor Controller			
	COM91C32	SMC			DP8422A	National		CY500	Cybernetic		100
Local Area Network Transceiver, Enhanced (converts data to NRZ or Manchester format)	COM92C32	SMC		Microfloppy Disk Controller for Sony Format	FDC7265	SMC		CY512	Cybernetic		
Magnetic Disk Controller (ESDI/ESMD and ST-506 format)	AM95C95	AMD		Microprogram Controller	AM2910A	* AMD		Multi I/O for XT			
Manchester Encoder/Decoder	MB502A	Fujitsu		Microprogram Controller (selects, stores, retrieves addresses that control (sequence of instruction execution))	CY2910AC	Cypress		UM82C852	◊ UMC		
	MA15530	GEC Plessey			CY2910AM	† Cypress		Multi-Protocol Communications Controller			
Manchester Encoder/Decoder	JMEDM-2010	† Technitrol		Microprogram Controller (20 MHz)	AM29C10A	* AMD		68651	Micro-C		
	JMEDM-2020	† Technitrol		MIL-STD-1553 MacAir/Grumman Bus Controller and Remote Terminal	UT1553 BCRTPM	◊† UPMC		R68561	Rockwell		
	JMEDM-2050	† Technitrol			UT1553 RTMP	◊† UPMC		R68650	Rockwell		
	JMEDM-2100	† Technitrol		MIL-STD-1553A/B Remote Terminal Controller—Multiprotocol	UT1553 RTMP	◊† UPMC		Multi-System Control Chip. Interfaces any two CYxxx Devices to a Computer, Keyboard or RS232 Terminal			
Manchester Encoder/Decoder	JMEDM-2120	Technitrol			UT1553 BCRTPM	◊† UPMC		CY250	Cybernetic		105
	JMEDM-2150	† Technitrol		MIL-STD-1553B Bus Controller—Remote Terminal Controller	UT1553B BCRTPM	◊† UPMC		Multibus II Bus Arbiter/Controller			
	JMEDM-5186	† Technitrol			UT1553B BCRTPM	◊† UPMC		BAC84110	Toshiba		
	JMEDM-5200	† Technitrol		MIL-STD-1553B Remote Terminal Controller	MA805	GEC Plessey		Multibus II Message Interrupt Controller			
	JMEDM-5230	† Technitrol			COM1553B	◊ SMC		MIC84120	Toshiba		
	JMEDM-5300	† Technitrol		MIL-STD-1553B Remote Terminal Interface Controller	UT1553B RTI	◊† UPMC		Multifunction I/O			
	JMEDM-5400	† Technitrol			MA8055	GEC Plessey		VG-603	Vadem		
	JMEDM-5500	† Technitrol		MIL-STD-1553B Subsystem Interface Circuit	MA8055	GEC Plessey		VG-82C451	Vadem		
	MEDM2010	Technitrol			CT1610	GEC Plessey		VG-82C452	Vadem		
	MEDM2020	Technitrol		MIL-STD-1555 Interface Circuit	CT1611	GEC Plessey		Multifunction I/O Controller (for IBM PC/XT/AT, dual UART)			
	MEDM2050	Technitrol			L64550	LSI Logic		MCCS16C452	◊ Motorola		70
	MEDM2100	Technitrol		MIL-STD-1750A MBU Peripheral				MCCS16C462	◊ Motorola		
	MEDM2120	Technitrol		MIL-STD-1760A Remote Terminal Controller with RAM	UT1760ARTS	◊† UPMC		MCCS16C451	◊ Motorola		
(Continued)								Multifunction I/O Controller (for IBM PC/XT/AT, single UART)			
								MCCS16C451	◊ Motorola		
								Multiple Protocol Controller, Serial			
								MB89372	Fujitsu		
								Neuron Chip			
								TMPN3120F	◊ Toshiba		115
								TMPN3150F	◊ Toshiba		
								Notebook VGA Clock Generator			
								AV9103	◊ Avaseam		
								Optical Disk Control (supports X3B11 and ISO Continuous Composite Serud Standard)			
								AM95C96	AMD		
								Optical Storage Support Device			
								WD60C80	Western		
								Parallel Interface Timer/			
								VL65C22V	VLSI Tech		120
								Parallel to Serial Interface			
								CY232	Cybernetic		
								PC/AT - Compatible Enhanced TOPCAT Combo 1/0			
								VL82C109	◊ VLSI Tech		
								PC/AT - Compatible SCAMP Combo 1/0			
								VL82C107	◊ VLSI Tech		
								PC/AT - Compatible TOPCAT Combo 1/0 Chip			
								VL82C108	◊ VLSI Tech		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Peripheral Interface (10 Mhz)	KS82C55A-10	Samsung		Protocol Processor, MIL-STD-1553		(Cont'd)	
PC/AT Address Controller (part of Flex 1 chipset)	SL9025	VIA Tech		Peripheral, Multifunction	TS68HC901	◊ SGS-Thomson		CT1604	GEC Plessey		
PC/AT Address/Data Buffer (part of CS8221 Chipset)	82C215	Chips&Tech		Peripheral, Programmable Peripheral Interface	8255A	◊* Intel		CT1605	GEC Plessey		
PC/AT Chipset (for 12 to 16 MHz Systems)	CS8221	Chips&Tech		Phase-Locked Oscillator For Winchester	ML405	◊ MicroLinear	35	CT1606	GEC Plessey		
PC/AT Chipset (for 386-based systems: 16/30/25/33 MHz)	CS8233	Chips&Tech		Phase-Locked-Loop (for picture-in-picture applications)	MB3511	◊ Fujitsu		CT1612	GEC Plessey		75
PC/AT Compatible Chipset (includes all core logic for 80386DX or 80386SX PC/AT systems)	Flex 1	VIA Tech		Picture-in-Picture Controller	MB86150N	◊ Fujitsu		CT1615	GEC Plessey		
PC/AT CPU/BUS Controller (part of CS8221 chipset)	82C211	Chips&Tech		Printer Adapter Interface	COM82C11	SMC		CT1617	GEC Plessey		
PC/AT Data Controller (part of Flex 1 chipset)	SL9020	VIA Tech		Printer Controller, for 5x7 Dot Matrix Printer	CY480	Cybernetic					
PC/AT Integrated Peripheral Controller	SL9030	VIA Tech		Printer, Dot Matrix Printer Controller	8295	Intel	40				
PC/AT Integrated Peripherals Controller (part of CS8221 chipset)	82C206	Chips&Tech		Priority Interrupt Controller	82C59	*† SMC		Raster Printer Accelerator (coprocessor for laser printers, up to 15 ppm)	CL-GP315	Cirrus	
PC/AT Memory Controller (part of Flex 1 chipset)	SL9X50	VIA Tech		Processor Signal Converter (accelerator for 8088 based system)	EL286-88-10	EdsunLabs		Raster Printer Accelerator (laser coprocessor)	CL-GP360	◊ Cirrus	
PC/AT Memory Interleaved/Page Controller (part of CS8221 chipset)	82C212	Chips&Tech		Program Control Unit (4-bit slice address controller for memories)	AM2930	AMD		CL-GP425	◊ Cirrus		
PC/AT Power Management Unit	SL9095	VIA Tech		Programmable Communications Interface	AM95C85	AMD		Real Time Clock	UM82C8167	UMC	
PC/AT System and Memory Controller (for 80386DX system)	SL9352	VIA Tech		Programmable Direct Memory Access Controller	82C237-10	◊ Harris		Real-Time Clock	MM58167A	National	85
PC/AT System and Memory Controller (for 80386SX system)	SL9252	VIA Tech		82C237-12	◊ Harris			MM58174A	National		
PC/AT System Clock Chip	SL9092	VIA Tech		Programmable DMA Controller	UM8237AE	UMC	45	RP5C01	Ricoh		
PC/AT System Controller (part of Flex 1 chipset)	SL9011	VIA Tech		Programmable Interrupt Controller	82C59A-10	◊† Harris		RP5C15	Ricoh		
PC/AT Universal Clock Chip	SL9090A	VIA Tech		82C59A-12	◊† Harris			146818	† SMC		
PC/AT/XT LEAP Chipset (Low-Powered Enhanced At Portable for 12, 16, 20 MHz laptops)	CS8223	Chips&Tech		IM18259	◊‡ IMI			TC8250	Toshiba (3735)		90
PC/AT/XT Peripheral Controller (two 16450 UARTs)	82C601	Chips&Tech		Programmable Interrupt Controller (with CMOS interface to 68000)	USC68HC908	Universal (3738)		Real-Time Clock/μP Interface	MSM5832	OKI (3600)	
PC/AT Single-Chip Mass Storage Controller	AIC6160	Adaptec		Programmable Interval Timer	IM18254	◊‡ IMI		L5832	SGS-Thomson		
PC Bus Interface Controller (handles PC interrupt, DMA, and data bus control)	WD83C580A	Western		82C54	† SMC			Real-Time Clock/Calendar	TC8205P	Toshiba	
PC Mouse Controller (CMOS)	5720	Commodore		UM8253	† UMC			TC8250A	Toshiba (3735)		
(PC XT/AT); Fully compatible with Cirrus Logic's CL-SH260 on page 880 line 128.	AV8520	◊ Avasem		Programmable Peripheral Interface	IM18255	◊‡ IMI	50	RS-232 Compatible Keyboard Controller	S25C8	USAR Systems	95
PC XT/AT Enhanced Hard Disk Controller	CL-SH265	Cirrus		CA82C55A	† Newbridge	(3593)		SCSI Bus Controller Device	WD33C92A	Western	
PC XT/AT Hard Disk Controller Chip	CL-SH360	◊ Cirrus						WD33C93A	Western		
PC/XT/AT/PS2 Compatible Keyboard Controller	K25C8	USAR Systems		Programmable Peripheral Interface (for use with iAPX86 family of processors)	8255A	AMD	55	SCSI Bus Interface Adapter	AV8500	Avasem	
PC XT/AT Single-Chip Mass Storage Controller	AIC6060	Adaptec		Programmable Storage Controller (controls embedded, ST412/506, ESDI and SMD drives)	AIC610	Adaptec		SCSI Bus Interface Controller for External Drivers	WD33C92	Western	
AIC7160	Adaptec			Programmable Storage Controller (ST412/506, ESDI, ST412HP, SA1000 and SMD drives)	AIC010	Adaptec		SCSI Bus Interface Controller with 48 mA Drivers	WD33C93	Western	100
PC/XT Integration Chip	UM82C088	◊ UMC		AIC011F	Adaptec			SCSI Controller	MSD95C00	SMC	
Peripheral Interface (8 Mhz)	KS82C55A-8	Samsung	30	Programmable Dual Clock Generator	ICS2594	◊† IntCirSys		SCSI Controller (1 Mhz)	KS53C80-1	◊ Samsung	
								SCSI Controller (3 Mhz)	KS53C80-3	◊ Samsung	
				Protocol Controller, LAPD (link access procedure protocol for ISDN networks)	MC68606	Motorola	25	SCSI Hard Disk Controller	CL-SH250	◊ Cirrus	
				Protocol Controller, X.25 (supports single-channel LAPD)	WD25C84	Western		SCSI Hard Disk Controller (uses asynch. protocol)	CL-SH255	Cirrus	105
				Protocol Processor, MIL-STD-1553	CT1560	GEC Plessey		SCSI Host Adapter	NCR53C400	◊ NCR	
					CT1561	GEC Plessey		SCSI Interface Controller	AM5380	AMD	
					CT1562	GEC Plessey		SCSI Processor	NCR53C90	◊ NCR	
					CT1563	GEC Plessey			NCR53C90A	◊ NCR	
					CT1601	GEC Plessey	65		NCR53C90B	◊ NCR	
					CT1602	GEC Plessey			NCR53C94	◊ NCR	
					CT1603	GEC Plessey	70		NCR53C95	◊ NCR	110
						(Continued)		SCSI Protocol Controller	MB87031	◊ Fujitsu	
									MB87033	◊ Fujitsu	
									MB89532	◊ Fujitsu	115

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Speech Recognition	TC8860 TC8864AF-00	◊ Toshiba	45	Universal Asynchronous Receiver/Transmitter (UART with parallel printer port)	GM16C451 GM82C550	◊ GoldStar	
SCSI Protocol Controller (Small Computer Systems Interface)	5380	AMD		Speech Recording	TC8834	◊ Toshiba		Universal Asynchronous Receiver/Transmitter with FIFOs	SAB16C550A	◊ Siemens	
	AV8580	Avasem		Speech Synthesis	TC8801 TC8802A TC8804 TC8805	◊ Toshiba	50	Universal Asynchronous Receiver/Transmitter	SAB16C450 SAB82C50	Siemens	85
	MB87030	Fujitsu		Stand Alone Microcontroller, Programmable	PAC1000-12	† Waferscale (3750)		Universal Peripheral Controller	82C710 82C711 82C712	Chips&Tech	
	MB89351	Fujitsu			PAC1000-16	† Waferscale (3750)		Universal Peripheral Interface, I/O Expander	8243	Intel	
	L53C80-2	◊† LogicDev	5		PAC1000-20	Waferscale (3750)		Universal Peripheral Interface (slave I/O processor)	UPI-452	Intel	90
	L53C80-4	◊† LogicDev		StarLAN Hub Controller	WD83C510	Western		Universal Peripheral Interface (8-Bit slave microcontroller—6 MHz)	UPI-41 UPI-42	Intel	
	L5380-2	◊† LogicDev		StarLAN Hub Controller (IEEE 802.3)	82C551	Chips&Tech	55	Universal Peripheral Interface, 1K EPROM	8741A	Intel	
	L5380-4	◊† LogicDev		StarLAN Hub Controller (IEEE 802.3 1BASE5 compatible)	WD83C510A	Western		Universal Peripheral Interface, 1K ROM	8041AH	Intel	
	NCR53C80	NCR	10	StarLAN Mini Hub Controller	WD83C503	Western		Universal Peripheral Interface, 2K EPROM	8742	Intel	95
	NCR53C81	NCR		StarLAN PC Bus Interface Controller	WD83C580	Western		Universal Peripheral Interface, 2K ROM	8042	Intel	
	NCR5380	◊ NCR		StarLAN, Serial Interface (IEEE 802.3)	82C550A	Chips&Tech	60	Universal Peripheral Interface, 4K EPROM	8744	Intel	
	NCR5381	NCR		StarLAN Transceiver	XRT82C516 XRT82515	Exar		Universal Peripheral Interface, 4K ROM	8044	Intel	
	NCR5385E	◊ NCR		Stepper Motor Controller and Peripheral Interface	CY545	Cybernetic		Universal Serial Controller (two independent 0 to 10 Mbit/s, full duplex channels)	Z16C30	◊ Zilog	
	NCR5386	◊ NCR		Stepper Motor Controller, Intelligent Ramping	CY525	Cybernetic		User-configurable Microprocessor Peripheral Device with 8-bit Bus Port (expandable to 16 and 32-bits)	EPB1400	◊† Altera	100
	CA53C80	† Newbridge (3593)	15	Storage Controller	MSD95C02	SMC	25	Versatile Interface Adapter	UM6522 UM6522A	UMC	
SCSI Single-Chip Mass Storage Controller	AIC6110 AIC7110	Adaptec		Storage Controller (20 Mbps)	SSI32C452	SiliconSys	65	VGA-Compatible Graphics Controller Chip	CL-GD5320	◊ Cirrus	
SCSI Dual-Ported Buffer Controller	NCR53C300	◊ NCR		String Proximity Computer and Ranker	PF474C	Proximity		Video Clock Generator, Dual Output	AV9116	◊ Avasem	
SCSI.2 Protocol Controller (16-Bit FAST)	MB86602	Fujitsu		Sync/Async SCSI Disk Controller	CL-SH350	◊ Cirrus	30	Video Controller (VDC)	VL86C310	VLSI Tech	105
SCSI.2 Protocol Controller (8-Bit FAST)	MB86601	Fujitsu	20	Sync/Async SCSI Hard Disk Controller Chip	CL-SH370	◊ Cirrus		Video Dot Clock Generator	ICS1394 ICS1394	◊† IntCirSys	
SCSI-2 Disk Controller Chip	CL-SH351	◊ Cirrus		Synchronous Data Link Controller	COM5025	SMC	70	Video Graphics Array (VGA) Chip	NCR77C22	◊ NCR	
Segmented Display Driver (drives grids and anodes of vacuum fluorescent displays)	10955	Rockwell		System Clock Generator	μPD71011	◊ NEC		Video Line Driver	VS620 VS621	VTC	110
Serial Communications Controller, High-Level (X.25, LAPB/LAPD protocol)	AM82520	AMD		System Controller for 80386 Based Systems	82C301	Chips&Tech	35	Video System Controller—12 MHz (generates user programmable control signals, horizontal sync, vertical sync, and blanking)	TMS34061-12	◊ TI	
Serial Communications Controller (multi-protocol)	Z8530 μPD7210 Z8530 Z8530A VL85C30	◊ AMD NEC ◊‡ SGS-Thomson ◊‡ SGS-Thomson VLSI Tech	25	Tape Drive Controller Device	ADS4360	Western		Video Windowing Controller (converts standard full-motion video image for display on computer graphics display)	82C9001	Chips&Tech	
Serial Communications Controller (single-channel, advanced multiprotocol)	μPD72002	◊ NEC		Tape Formatter with PLL, Counter, Timer, I/O	9820	◊ Stac		Videotext CRT Display Processor	EF9340 EF9341	SGS-Thomson	
Serial Communications Controller (8 MHz)	KS85C30-8 Z8030B Z8530B	Samsung ◊† SGS-Thomson ◊† SGS-Thomson	30	Token Ring Controller, IEEE 802.5 LAN Controller	TC35802	Toshiba	75	VMEbus Address Controller (I/O capability for 32-bit CPU)	VAC068	Cypress	115
Serial Communications Controller (10 MHz)	KS85C30-10	Samsung		Trajectory Generator For Winchester	ML404	◊ MicroLinear		VMEbus, Bus Controller	SCB68175	Signetics	
Serial Controller (8 MHz)	KS82C52-8	Samsung		TV Display Controller	MB88303	Fujitsu	40				
Serial Controller (10 MHz)	KS82C52-10	Samsung		UART	IM18251	◊‡ IMI					
Serial/Parallel Asynchronous Communication Engine	CL-CD1400	◊ Cirrus (3427)		UART, Programmable High-Speed CMOS (with baud rate generator)	COM81C17	SMC					
Serial Timer Interrupt Controller	MK3801-6	SGS-Thomson		Universal Asynchronous Receiver/Transmitter (UART)	GM16C450 GM82C50A	◊ GoldStar	80				
Signalling Controller, No. 7 Common Channel Protocol	μPD72307	◊ NEC									
Small Computer System Interface (SCSI) Controller	MB87034 MB87035 MB87036	Fujitsu									
SMD Controller/Formatter	WD1050	◊ Western									
SPARC ECL Floating Point Controller	B5100	Bipolar									

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Winchester Disk Memory Read/Write Circuit	MB4111	Fujitsu	45	Winchester, Head Positioning Set, Quad d'bit servo	ML401	MicroLinear	95
					MB4112	Fujitsu			ML402	MicroLinear	
VMEbus Interface Controller					SSI32R104C	◊ SiliconSys			ML403	MicroLinear	
MPC	VTC				SSI32R115	SiliconSys		Winchester High Performance Pulse Detector Circuit	SSI32P541A	◊ SiliconSys	(3685)
VIC068	VTC			Winchester Disk Memory Read/Write Circuit (for ferrite heads)	SSI32R188	SiliconSys					
VMEbus Interface Controller (for 8, 16, or 32-bit system)	VIC068	Cypress			SSI32R501	SiliconSys	(3685)	Winchester High Performance Pulse Detector w/ Filter Mux	SSI32P547	◊ SiliconSys	(3685)
VMEbus, Interrupt Controller	SCB68155	Signetics			SSI32R510A	SiliconSys	(3685)				
VMEbus, Interrupt Generator	SCB68154	Signetics	5	Winchester Disk Memory Servo Preamplifier, for thin-film heads	VM214	VTC		Winchester High Speed Pulse Detector Circuit	SSI32P541B	◊ SiliconSys	(3685)
Voice Recording/Reproduction	TC8833F	◊ Toshiba									
Winchester Controller/Formatter	1010-00	Micro-C		Winchester Disk Memory Video Amplifier, for Magnetic Servo Head	SSI32H101A	SiliconSys		Winchester Low Noise Read/Write Amplifier (for Ferrite Heads)	SSI32R516	◊ SiliconSys	(3685)
	WD1010A	Western		Winchester Disk Memory Video Amplifier, for Thin Film Magnetic Heads	SSI32H116A	◊ SiliconSys	(3686)	Winchester Motor Speed Control	SSI32M591	SiliconSys	
Winchester Differential Input High Gain Read/Write Amplifier (for Thin Film Heads)	SSI32R528	◊ SiliconSys	(3685)					Winchester Pulse Detector and Data Synchronizer Combo	SSI32P548	◊ SiliconSys	(3685)
	SSI32R528R	◊ SiliconSys	(3685)	Winchester Disk Parallel-to-Serial Converter	HDC1100-05	SMC		Winchester Pulse Detector and Embedded Servo Capture Circuit.	SSI32P544	◊ SiliconSys	(3685)
Winchester Differential Input Read/Write Amplifier (for Thin Film Heads)	SSI32R527	◊ SiliconSys	(3685)	Winchester Disk Read/Write Amplifier with Damping Resistors, 2-Channel	VM117R2	VTC					
	SSI32R527R	◊ SiliconSys	(3685)		VM117R4	VTC		Winchester Pulse Detector Circuit	ML541C	MicroLinear	
					VM117R6	VTC		Winchester Pulse Detector with Pulse Slimming Equalization Circuit.	SSI32P546	◊ SiliconSys	105
Winchester Disk Address Mark Detector	HDC1100-03	SMC			VM217R6	VTC					
Winchester Disk Controller					VM217R8	VTC		Winchester Read Data Processor (time domain filter)	SSI32P540	◊ SiliconSys	
HDC7261	SMC			Winchester Disk Read/Write Amplifier, 2-Channel	VM1172	VTC		Winchester Read/Write Amplifier (for ferrite heads)	SSI32R511	SiliconSys	(3685)
HDC9224	◊ SMC				VM1182	VTC					
ADS1000	Western			Winchester Disk Read/Write Amplifier, 4-Channel	VM1174	VTC		Winchester Read/Write Amplifier (for thin-film heads)	SSI32R512	SiliconSys	(3685)
WD10C00	Western				VM1184	VTC					
WD30C30	Western				VM314	VTC		SSI32R522	SiliconSys	(3685)	
Winchester Disk Controller Chip Set				Winchester Disk Read/Write Amplifier, 5-Channel	VM115	VTC		SSI32R524R	SiliconSys	(3685)	
WD1100	Micro-C							SSI32R525	SiliconSys	(3685)	
1100-01-02	Micro-C			Winchester Disk Read/Write Amplifier, 6-Channel	VM1176	VTC		SSI32R529	SiliconSys	(3685)	
1100-03-02	Micro-C				VM1186	VTC					
1100-05-02	Micro-C				VM2176	VTC		Winchester Read/Write Amplifier with Internal Damping Resistor (for Thin Film Heads)	SSI32R526R	◊ SiliconSys	(3685)
1100-06-02	Micro-C				VM2186	VTC					
1100-07-02	Micro-C			Winchester Disk Read/Write Amplifier, 8-Channel	VM2178	VTC		Winchester Read/Write Circuit	CS117	Cherry Semi	
1100-11	Micro-C				VM2188	VTC					
1100-11-02	Micro-C			Winchester Disk Read/Write Preamplifier	ML117	MicroLinear		Winchester, Read/Write Circuit for thin-film heads	ML502	MicroLinear	115
1100-12-02	Micro-C				VM117	VTC					
1100-21-02	Micro-C				VM118	VTC		Winchester Read/Write Circuit, 2- 4- or 6-Channel	SSI32R117	SiliconSys	(3685)
WD1100	Western				VM217	VTC					
Winchester Disk Controller, Error Correction Circuit	WD11C00-13	Western			VM218	VTC		SSI32R117A	SiliconSys	(3685)	
Winchester Disk Controller/Formatter				Winchester Disk Serial to Parallel Converter	HDC1100-01	SMC					
82062	Intel							Winchester Read/Write Circuit, 8-Channel	ML501	MicroLinear	
2010-05-02	Micro-C			Winchester Disk Servo Preamplifier	μA24H80	National		Winchester Spindle Motor Controller (three-phase)	SSI32M593A	SiliconSys	(3686)
WD2010-05	Western				VM216	VTC					
WD5010	Western			Winchester Disk Support Device	10C21-75-02	Micro-C		Winchester, Support Logic	SSI32B545	◊ SiliconSys	120
WD5011-10	Western				11C00-22-02	Micro-C					
Winchester Disk Controller, PC/XT Host Interface Logic Device	WD11C00-17	Western			ADS3570	Western		Winchester Thin-Film Head Read/Write Circuit	SSI32R520	SiliconSys	(3685)
Winchester Disk Controller (with on-chip EDAC)	82064	Intel			ADS5050	Western			SSI32R521	SiliconSys	(3685)
Winchester Disk CRC Checker/Generator	HDC1100-04	SMC			WD10C20B	Western		X.25 Protocol Controller	68605-10	Micro-C	
Winchester Disk Data Separator (self-adjusting)	SYSC	Western			WD10C21A	Western			68605-12	Micro-C	
WD10C20	Western				WD11C00-14	Western			MC68605	Motorola	125
Winchester Disk Head Actuator Control Circuit	μA2460	National			WD11C00B-20	Western					
	μA2461	National			WD11C00C-22	Western					
Winchester Disk Improved MFM Generator	HDC1100-12	SMC			WD50C12	Western					
					WD50C20A	Western					
				Winchester, Error Detection (Support Logic for WD1015)	1014-01-05	Micro-C					
					WD1014	Western					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Peripheral Controllers (Cont'd)				Microcomputer, 8-Bit (full 8085 instruction set, 2K SRAM, 2K ROM)	DHC8P85	White Tech		Microprocessor, 16/32-Bit (16 MHz HCMOS)		(Cont'd)	
Dual Asynchronous Serial/Parallel Port, IBM PC/AT Compatible	Zy16C452	ZyMOS		Microcomputer, 8-Bit (16K E ² PROM, 3K ROM, 128 bytes RAM)	CAT62C580	Catalyst Semi	40	68HC000-16	Micro-C	80	
Dual Channel NRZI Encoder/Decoder	USCL2002	Universal		Microcomputer, 16-Bit (64K E ² PROM, 64K ROM, 192 bytes RAM)	CAT62C780	Catalyst Semi		68HC000-8	Micro-C		
Dual Data Link Controller (DDLC)	MC145488	Motorola		Microcomputer, 8088 Instruction Set (with 16K SRAM, 16K EEPROM)	C16P88	White Tech		MC68HC000	* Motorola		
Dual Universal Asynchronous Receiver/Transmitter (DUART with parallel printer port)	GM16C452	♦ GoldStar		Microcomputer, 8-Bit (16K ROM, 256 bits RAM)	MSM83C154	OKI		Microprocessor, 16-Bit (4x2901 bit-slice architecture)	RS59016	Harris	
Dual Video/Memory Clock Generator	ICS2494	♦† IntCirSys	5	Microcomputer, 8-Bit (256 bits RAM)	MSM80C154	OKI (3602)		Microprocessor, 32-Bit (MIL-STD-1750A or RISC mode)	UT1750AR	UTMC	
Dual-Channel Multiprotocol Controller	8274	* Intel		Microprocessor Compatible Real Time Clock	MM58274C	National	45	Microprocessor, 32-Bit RISC	IDT79R2000	♦‡ IDT	
Quad UART with FIFO	VL16C554	VLSI Tech		Microprocessor Control Unit	CA2855	Newbridge		Microprocessor, 32-Bit (8 and 10 Mhz)	SC32	Sil Composers	85
Four Phase Clock Generator	WD2143-03	Western		Microprocessor Macrocell, 8-Bit (80C51 instruction set)	VH20C51	Harris		Microprocessor-Watchdog, Battery Switchover, reset Generator	MAX694	♦† Maxim	
4-Bit Microcontroller	KS51000	♦ Samsung		Microprocessor Monitor Circuit (CMOS)	C1232	CMD Micro		MAX695	♦† Maxim		
KS55000	♦ Samsung		10	Microprocessor Monitor (monitors voltage, system activity)	DS1232	Dallas		Microcontroller, -Bit (2Kx8 ROM, 64x4 RAM)	BU2424L	ROHM	
286 PC/AT Data Buffer (12 MHz)	UM82C232	♦ UMC		Microprocessor Peripheral	M66800	Mitsubishi	50	Microcontroller, Military Grade	RTX2000/883	Harris	
286 PC/AT System Controller (12 MHz)	UM82C231	♦ UMC		Microprocessor Programmable Timing Edge Vernier (4 to 40 ns delay)	Bt605	Brooktree (3404, 3406)		Microcontroller with Embedded Real-Time Clock	DS5000T	Dallas	90
386 PC/AT Chip Set: Address Buffer	UM82C382	♦ UMC		Microprocessor Slice, 4-bit	29C01	♦‡ Ideal Semi (3535)		Microcontroller, 4-Bit (1Kx8 ROM, 32x4 RAM)	BU2430L	ROHM (3616)	
386 PC/AT Chip Set: Data Buffer	UM82C383	♦ UMC		Microprocessor Supervisor (including 2Kx8 fast NVRAM)	bq1001	Benchmark		BU2431L	ROHM (3616)		
386 PC/AT Chip Set: Memory Controller	UM82C384	♦ UMC	15	Microprocessor Supervisor (including 2Kx8 fast NVRAM and address latch)	bq1002	Benchmark		Microcontroller, 4-Bit (1Kx8 ROM, 32x4 RAM, 4 I/O)	BU2418L	ROHM (3616)	
386 PC/AT Chip Set: System Controller	UM82C381	♦ UMC		Microprocessor Supervisory Circuit (adjustable low line monitor and power down reset)	MAX696	Maxim	55	BU2419L	ROHM (3616)		
386SX/286 AT Chip Set: Data/Address Buffer	UM82C215	♦ UMC		MAX697	Maxim			BU2422L	ROHM (3616)		95
386SX/286 AT Chip Set: Memory Controller	UM82C211	♦ UMC		Microprocessor Supervisory Circuit (lowline, monitor and reset)	MAX1232	♦ Maxim		Microcontroller, 4-Bit (1Kx8 ROM, 64x4 RAM)	BU2421	ROHM (3616)	
UM82C212	♦ UMC			Microprocessor Supervisory Circuit (voltage monitor, watchdog-timer, etc.)	MP690	Supertex	60	BU2425	ROHM (3616)		
General Purpose				Microprocessor Supervisor (including 2Kx8 fast NVRAM)	MP691	Supertex		Microcontroller, 4-Bit (4Kx8 ROM, 256x4 RAM, 12 I/O ports)	BU24410L	ROHM (3617)	
Microcomputer with Tone Generator and LCD Driver	LR4810	Sharp		Microprocessor Supervisor (including 2Kx8 fast NVRAM and address latch)	MP692	Supertex		BU24407L	ROHM (3617)		
Microcomputer, 4-Bit, CMOS	LC6527	Sanyo		Microprocessor Supervisory Circuit (adjustable low line monitor and power down reset)	MP693	Supertex		Microcontroller, 4-Bit (60x8 ROM, 16x4 RAM)	BU2403L	ROHM (3616)	
LC6543	Sanyo			MAX696	Maxim			BU2404L	ROHM (3616)		
LC6546	Sanyo			MAX697	Maxim			BU2428L	ROHM (3616)		
Microcomputer, 4-Bit, CMOS + A/D, D/A Converter	LC65102A	Sanyo		Microprocessor Supervisory Circuit (lowline, monitor and reset)	MAX1232	♦ Maxim		BU2429L	ROHM (3616)		
LC65104A	Sanyo			Microprocessor Supervisory Circuit (voltage monitor, watchdog-timer, etc.)	MP690	Supertex	20	Microcontroller, 4-Bit (8Kx8 ROM, 256x8 RAM, 12 I/O ports)	BU24805L	ROHM (3617)	
LC65204A	Sanyo			MP691	Supertex			BU24809L	ROHM (3617)		105
LC65404A	Sanyo			MP692	Supertex			Microcontroller, 4-Bit (8Kx8 ROM, 512x8 RAM)	BU24807	ROHM	
Microcomputer, 4-Bit, CMOS + Infrared Remote Carrier Generator	LC573404A	Sanyo		MP693	Supertex			Microcontroller, 4-Bit (8192x8 ROM)	BU24808L	ROHM (3617)	
LC573406A	Sanyo			MP694	Supertex			Microcontroller, 8-Bit (four separately configurable 8-Bit I/O ports, programmable UART, and 4Kbytes of ROM)	TMS70A2400	TI	
LC5851N	Sanyo			MP695	Supertex			Microcontroller, 8-Bit (I ² C serial interface, 3Kx8 ROM, 224x8 RAM)	PCD3343	Signetics	
LC5872	Sanyo			MP696	Supertex			Microcontroller, 8-Bit (with OTP EPROM)	PIC16C54HS	♦ Microchip	110
LC5873	Sanyo			MP697	Supertex			PIC16C54RC	♦ Microchip		
LC5874	Sanyo			Microprocessor Voltage Regulator (supervisory circuit)	MC33160	Motorola		PIC16C54XT	♦ Microchip		
LC5876	Sanyo			MC34160	Motorola			PIC16C55HS	♦ Microchip		
Microcomputer, 4-Bit, CMOS with LCD Driver	LC5732N	Sanyo		Microprocessor Watchdog, Battery Switchover, Reset Generator	MAX690C	Maxim	30	PIC16C55RC	♦ Microchip		
LC5738	Sanyo			MAX690M	† Maxim			PIC16C55XT	♦ Microchip		
Microcomputer, 4-Bit (4Kx12 ROM, 576x4 RAM, sound generator, LCD driver and Watchdog Timer)	SMC6235	S-MOS		MAX691C	Maxim			PIC16C56HS	♦ Microchip		
Microcomputer, 4-Bit (4Kx16 ROM, 512x4 RAM)	S1400	Seiko Instr		MAX692C	Maxim			PIC16C56RC	♦ Microchip		
				MAX692M	† Maxim			PIC16C56XT	♦ Microchip		
				MAX693C	Maxim			PIC16C57HS	♦ Microchip		
				MAX693M	† Maxim			PIC16C57RC	♦ Microchip		
				Microprocessor, 8-Bit	IL8080	Lansdale	35	PIC16C57XT	♦ Microchip		120
				Microprocessor, 8-Bit (80C51 instruction set)	RS20C51	Harris		Microcontroller, 8-Bit (with ROM)	PIC16CR54HS	♦ Microchip	
				Microprocessor, 16/32-Bit (16 MHz HCMOS)	68HC000-10	Micro-C	75	PIC16CR54RC	♦ Microchip		
				68HC000-12	Micro-C			PIC16CR54XT	♦ Microchip		
				(Continued)				Microcontroller, 8-Bit (with 32K EEPROM, 8K SRAM)	C8P31	White Tech	125

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Advanced Burst Error Processor (implements Reed-Solomon code for X3B11 and ISO Continuous Serud Standard)	AM95C94	AMD	30	Battery Charger, NiCd	ICS1700	† IntCirSys	
Microcontroller, 8-Bit (1.5Kx8 ROM, 64x8 RAM)	PCF84CF12	Signetics						Battery Fast Charge Controller and Discharge Monitor	bq2001	Benchmarq	
Microcontroller, 8-Bit (1.5Kx8 ROM, 64x8 RAM, DTMF/Modem tone outputs)	PCD3347	Signetics		ALU, CMOS 16-Bit Microprogrammed	CY7C9115-65C	◊ Cypress		BITBLT Processing Unit	DP8510	National	
Microcontroller, 8-Bit (16K ROM, 512 bytes RAM, 15 bytes dual port RAM)	HD6473308	Hitachi		Analog I/O Port with 6-Channel, 8-Bit ADC and 12-Bit DAC (CMOS)	AD7770	AD		BITBLT Processing Unit (20 MHz)	DP8511	National	75
Microcontroller, 8-Bit (2Kx8 ROM, 224x8 RAM, DTMF/Modem tone outputs)	PCD3344	Signetics		Analog I/O Port with 12-Bit ADC and 12-Bit DAC	AD7868	AD (3321, 3350, 3355)		Block Transfer Buffer	LR3205	LSI Logic (3567)	
Microcontroller, 8-Bit (2Kx8 ROM, 64x8 RAM)	PCF84C22	Signetics		Analog Input Data Acquisition Controller for A/D Converter	CY600	Cybernetic		Boundary Scan Interface Circuit (driver)	LT54TC32	† LSTI	
Microcontroller, 8-Bit (2Kx8 ROM, 64x8 RAM, I ² C serial interface)	PCF84C21	Signetics		Analog Input, Multiplexer, A/D (analog to pulse width output)	μA9708	National			LT74TC32	◊ LSTI	
Microcontroller, 8-Bit (4K ROM, 64x8 RAM)	PCF84C42	Signetics		Analog Input, Multiplexer, A/D Converter	μPD7001	NEC	35	Boundary Scan Interface Circuit (receiver)	LT54TV32	† LSTI	80
Microcontroller, 8-Bit (4Kx8 ROM, 128x8 RAM, I ² C serial interface)	PCF84C41	Signetics			μPD7002	NEC			LT74TV32	◊ LSTI	
Microcontroller, 8-Bit (4Kx8 ROM, 128x8 RAM, LCD driver, I ² C serial interface)	PCF84C430	Signetics		Analog Output, D/A Converter, Latched Input	NE5018	Signetics		BTL Arbitration Transceiver	DS3885	◊ National	
Microcontroller, 8-Bit (4Kx8 ROM, 224x8 RAM, DTMF/Modem tone outputs)	PCD3349	Signetics		ARCNET Local Area Network Controller	COM90C62	SMC		BTL Handshake Transceiver	DS3884	◊ National	
Microcontroller, 8-Bit (8Kx8 ROM, 256x8 RAM, I ² C serial interface)	PCF84C81	Signetics		Arithmetic Logic/Multiplier, Floating Point Set	IDT721265	IDT	40	BTL 9-Bit Data Transceiver	DS3883	◊ National	
Microcontroller, 16-Bit (for DP, automotive, etc.)	SAB80C166	Siemens			IDT72264	IDT			DS3886	◊ National	
Microcontroller, 16-Bit (16K ROM, 512 bytes RAM, A/D Converter)	MSM66301	OKI		Arithmetic Processor	AM9511A	AMD		Burst Error Processor	AM9520	AMD	85
Microcontroller, 16-Bit (16K ROM, 512 bytes RAM, A/D Converter)	MSM66301	OKI			8231A	◊ Intel		Bus Compatible Digital PWM for Direct Control of a Power H-Bridge (provisions for dead time, output protection)	IXDP610	IXYS	
Microcontroller, 68020-Based (with 32Kx32 EEPROM, 32Kx32 SRAM)	C32P020	White Tech		Asynchronous Bidirectional Bus Extender and Repeater	N8X41	Signetics	10	Bus Controller for Testability Driver	LT54TC16	† LSTI	
Microcontroller, 4-Bit (A/D converter, LCD)	TMP47C446A	Toshiba (3728)		Asynchronous Communication Interface Adapter	HD63A50	Hitachi		Bus Controller, I ² C (interface between standard parallel-bus and the serial I ² C bus)	PCD8584	Signetics (3638)	
Microcontroller, 4-Bit (D/A converter, LED)	TMP47C233A	Toshiba (3728)			HD6350	Hitachi		Bus Controller Remote Terminal Interface (for MIL-STD-1553B bus)	VM1553	VLSI Tech	50
Microcontroller, 4-Bit (DTMF, LCD)	TMP47C433A	Toshiba (3728)			68A50	Micro-C		Bus Exchange, Multiple (4-bit by 4-port)	AM29C982	◊ AMD	90
Microcontroller, 4-Bit (LCD, Timer/Counter)	TMP47C456A	Toshiba (3728)			68B50	Micro-C			AM29C983	◊ AMD	
Microcontroller, 4-Bit (LCD, Timer/Counter)	TMP47C620	Toshiba (3729)		Asynchronous Communications Adapter (bus interface to 68000)	USC68HC551	Universal (3738)		Bus Interface Register, Bidirectional	WS59820	† Waferscale (3753)	
Microcontroller, 4-Bit (with VF display driver)	MSM58422	OKI (3600)		Asynchronous Communications Element	UM82C450	UMC	15	Bus Master Interface for AT Bus	AT9000	◊ PLX Tech	
Microcontroller, 80C31-Based (with 64K-flash program memory and 8K SRAM)	C8P31F-64	White Tech			UM82C50A	UMC		Bus Master Interface for AT Bus (and Intel 82596 LAN Controller)	AT9020	◊ PLX Tech	
Timing and keyboard/display interface (TKDI)	G65SC37	CMD Micro		Asynchronous Communications Element (ACE)	CA82C50A	Newbridge		Bus Master Interface for AT Bus (and National's DP83932)	AT9010	◊ PLX Tech	95
Voice Packet Assembler/Disassembler (VPAD)	G24802	CMD Micro		Asynchronous Communications Element, Enhanced	WD16C550	Western		Bus Master Interface for Micro-Channel	MC9000	◊ PLX Tech	
A/D Converter, 16-Bit Sigma-Delta Type	DSP56ADC16	Motorola		Asynchronous Communications Element, Parallel and Dual	KS82C462	Samsung	20	Bus Master Interface for Micro-Channel (and Intel 82596 LAN Controller)	MC9020	◊ PLX Tech	
A/D Converter (8-Bit with 8-channel multiplexer)	TC5093A	Toshiba (3727)		Asynchronous Communications Element, Dual	16C452-00-02	Micro-C		Bus Master Interface for Micro-Channel (and National DP83932 LAN Controller)	MC9010	◊ PLX Tech	65
Address Decoder (68000 interface)	USC68HC138	Universal (3738)			16C452-00-03	Micro-C		Bus Monitor for Testability (receiver)	LT54TV16	† LSTI	100
				Asynchronous Communications Interface Adapter (ACIA)	CDP65C51A	Harris		Bus Transceiver, SCSI	NCR83C10	◊ NCR	
					CDP68C51A	Harris			NCR83C11	◊ NCR	
				AT interface, 8-Bit (reduces chip count by over 75%)	IC104	InfoChip Sys		Bus Transceiver, SCSI (48 mA)	NCR8310	NCR	
				AT-to-SCSI Host Adapter (supports up to 56 logical devices)	AIC6260A	Adaptec (3306)		Cache Controller (part of SparKIT-20 chipset)	L64824	LSI Logic (3569)	
				Backplane Transceiver Logic (BTL) Transceiver	DS3893A	National		Cache Memory Subsystem	μPD43608	NEC	
				Bar Code Processor	NCR8301	NCR		Cascadable Adaptive Finite Impulse Response Filter (CA FIR)	DSP56200	Motorola	105
				Battery Backup Circuit	ICL7673	◊ Harris	70				
				Battery backup control circuit (with dual alarms)	MB3790	Fujitsu					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Color Lookup Table and DAC (256x12)	IM2110	Harris		Cryptographic Data Security Element (12 Mbps data rate)	99C003	CE Infosys	
CA16C001 Development system for use in PC XT/AT Compatibles. Allows Development of CA16C001 digital audio compression applications	CDS-001D	Newbridge (3593)		Color Palette Device w/Power Down (pixel rates up to 80 MHz)	AV3677	Avasem		Data/Address Buffer	KS82C203	Samsung	
CCITT Variable Length Coder/Decoder (performs run length and variable length coding and decoding)	L64750 L64751	LSI Logic (3571) LSI Logic (3571)		Color Palette for PS/2 (66 MHz pixel rate)	AT76C176A-66	ATMEL	35	Data Buffer (part of SparkIT-20 chipset)	L64822	LSI Logic (3569)	70
CD-I ADPCM Decode Processor	YM6064	Yamaha		Color Palette for PS/2 (80 MHz pixel rate)	AT76C176A-80	ATMEL		Data Buffer, Dual-Port Bidirectional (32Kx8)	μPD42532	NEC (3591)	
CD-I Data Controller	YM6063	Yamaha	5	Color Palette for PS/2 (110 MHz pixel rate)	AT76C176A-110	ATMEL		Data Ciphering Processor (encrypts and decrypts data)	AM9568	AMD	
Central Processing Unit (CPU)	L64811	LSI Logic (3569)		Color Palette with Triple 6-Bit DAC	TMC0176	TRWLSI		Data Ciphering Processor (for data encryption)	Z8068	Zilog	
Centronics I/O Interface and RS-232C	TC8576AF	Toshiba (3735)		Color Palette (Three 4-Bit Video DACs)	TMS34070-66	TI		Data Compression Coprocessor	9703 9704	Stac Stac	75
Centronics I/O with RS-232-C Port	TC8576A	Toshiba		Color Palette (35 MHz pixel rate, 256 colors)	SAB82C171-35	Siemens	40	Data Encryption Unit	8294	Intel	
Centronics Input and RS-232C	TC8578AP	Toshiba (3735)		Color Palette (40 MHz pixel rate, 256 colors)	SAB82C176-40	Siemens		Data Retention Module (converts CMOS SRAM to non-volatile RAM)	DRM DRM2	Catalyst Rsch Catalyst Rsch	
Centronics Output and RS-232C	TC8577AP	Toshiba (3735)	10	Color Palette (50 MHz pixel rate, 256 colors)	SAB82C171-50 SAB82C176-50	Siemens Siemens		Data Separator, Self-Adjusting (for hard disks, ST506/412 winchester types)	10C22-10-02 WD10C22B	Micro-C Western	80
Centronics Output with RS-232 Port	TC8577A	Toshiba		Communications, Biphase Processor (processes IBM 3270, 3299 and 5250 protocols)	DP8344	National		Data Synchronizer (all code)	DP8459	National	
Character Display, On-Screen 12 Lines by 24 Columns	μPD6145	NEC		Compression Coprocessor (with programmable DMA functions and AT interface logic)	IC106	InfoChip Sys	45	Digital Audio Companding Processor for Voice and Audio Compression/Expansion	CA16C001	Newbridge (3593)	
Chip Set For PC/XT Compatible Systems	VG100A/200A VG110/210	Vadem Vadem		Compression/Decompression Coprocessor (for mass storage devices, 1.5 Mbps compression, 4 Mbps decompression)	IC105	InfoChip Sys		Digital Pulse Width Modulator (programmable frequency)	CDP68HC68W1	Harris	
Chip Set For PS/2 Mod. 30 Or PC/XT Compatible Systems	VG501/502	Vadem	15	Consumer Electronics Bus Controller	SN75C080	TI		Digital Signal Processor (Microcomputer including 16x16 Multiplier, RAM, ROM for rapid signal processing)	MB87064 MB8764	Fujitsu Fujitsu	85
Clear/Acquisition Coder (generates the C/A codes and other timing information required in GPS receivers)	STEL1023	STEL (3703)		Controller, Micro Channel™ Bus Controller and Arbitrator	MCA1200	PLX Tech		Digital Signal Processor (Microcomputer including 24x24 Multiplier, RAM, ROM for rapid signal processing)	DSP56000	Motorola	
Clock/Calendar with Serial I/O (Inter IC interface)	PCF8573	Signetics		Controller, Programmable Integrated Controller/Sequencer (State machine with instruction processing for decision, control or timing applications)	LS7270	LSI Comp		Digital Signal Processor, Microcontroller (EPROM version)	TMS320E14	TI	50
Clock/Calendar, Real-Time	MSM68321	OKI		Controller, VMEbus Master Controller with System Arbitrator	VME1200	PLX Tech		Digital Signal Processor (EPROM version of TMS320C25)	TMS320E25	TI	
Clock Controller (part of SparkIT-20 chipset)	L64823	LSI Logic (3569)		Controller, VMEbus Slave Controller	VME2000	PLX Tech		Digital Signal Processor (2K RAM—program, 1K RAM—data)	ADSP2101 ADSP2102	AD AD (3349) (3349)	90
Clock Generator	IL8224	Lansdale (3549)	20	Controller, VSBbus Master Controller	VS81200	PLX Tech		Digital Signal Processor (16/32-bit)	TMS320E15	TI	
Clock Generator and Microcycle Length Controller (up to 50 MHz)	AM2925A	AMD		Controller, VSBbus Master Controller (chip set)	VS81400	PLX Tech		Digital Signal Processor, 16-Bit (CMOS first generation)	SMJ320C10-25 SMJ320C15-25	TI TI	55
Clock Generator, Crystal	DP8514	National		Controller, VSBbus Slave Controller	VS82000	PLX Tech		Digital Signal Processor, 16-Bit (first generation)	SMJ320E15	TI	
Clock Generator (for medium performance graphics systems)	DP8530	National		Coprocessor, 32-Bit RISC Floating Point Accelerator	PR3010-16XC PR3010-16XM PR3010-20XC PR3010-20XM PR3010-25XC PR3010-25XM	Performance Performance Performance Performance Performance Performance		Digital Signal Processor, 16-Bit (NMOS second generation)	SMJ32020	TI	95
Clock Generator, Multi-Board Video (for medium to high-performance CRT graphics systems)	DP8513	National		Crossbar Switch (30 MHz)	L64270-30	LSI Logic (3570)	25	Digital Signal Processor, 16-Bit (second generation)	SMJ320C25-50	TI	
Clock, Real Time	MM58174 MM58274 MM58274A	National National National		CRT Color/Monochrome Video Attributes Controller	SCB2675T	Signetics		Digital Signal Processor, 16-Bit (10 MHz)	SMJ320C10	TI	
Clock, Real Time, 12/24 Hour Format (Uses 8-bit bidirectional data bus)	ICM7170	Harris		CRT Controller, ACRTC	SCC63484	Signetics		Digital Signal Processor, 16-Bit (15 MHz)	SMJ320C15	TI	
Clock, Real-Time	μPD4491	NEC		CRT Display Controller	TC8505A	Toshiba		Digital Signal Processor, 16-Bit (25 MHz)	SMJ320C25	TI	
Coaxial Transceiver Interface (for Ethernet/Cheaper net LANs)	DP8392C DP83922C-1	National National	30	CRT Programmable video Timing Controller, Turbo	SCN26727	Signetics		Digital Signal Processor, 25 MHz EPROM Version of TMS320C15	TMS320E15-25	TI	100
Coaxial Transceiver Interface (for Ethernet/Thin Ethernet)	MBL8392A	Fujitsu		CRT Video Display Controller, Turbo	SCN2674T	Signetics		Digital Signal Processor, 32-Bit Floating Point	TMS320C30	TI	
				CRT Video Driver Amplifier	LH2422	National					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Ethernet Chip Set (network interface Controller)	WD83C690	Western		Floppy Disk Controller	TC8565A	Toshiba	
Digital Signal Processor, 50 MHz CMOS Fixed Point	TMS320C25-50	TI		Ethernet Controller, NICE Compatible	MB86960	Fujitsu		Floppy Subsystem Chip (for PS/2 system)	WD57C65	Western	75
Discrete Cosine Transform Processor	L64735	LSI Logic (3571)		Ethernet Controller, Star LAN Compatible	MB86950	Fujitsu	40	Function Generator, D/A Controller	CY360	Cybernetic	
DMA Address Generator	MAS2940	GEC Plessey		Ethernet Encoder/Decoder	MB502A MB86951	Fujitsu Fujitsu		Futurebus Interface Chip, Arbiter	CA91C896	Newbridge (3593)	
DMA Controller	L64853 L64853A	LSI Logic (3569) LSI Logic (3569)	5	Ethernet TRAM (transputer module)	IMS B407	SGS-Thomson		Futurebus Interface Chip, Interface Unit	CA91C897	Newbridge	
DRAM Controller	LR3203 L64850	LSI Logic (3567) LSI Logic (3569)		Ethernet Transceiver	NE8392A	Signetics (3672)		Futurebus Interface Chip, MC88000 Interface	CA91C880	Newbridge (3593)	
DRAM Controller (part of SparKIT-20 chipset)	L64826	LSI Logic (3569)		Evaluation board for G65SC150 CTU	G65DS-150	CMD Micro	45	General Purpose Analog Neural Network Processor	MB4442	Fujitsu	80
DRAM Data Buffer	LR3204	LSI Logic		FDDI (Fiber Distributed Data Interface) Clock Recovery Device	DP83231	National		General Purpose Fixed Point Digital Signal Processor (27 MHz)	DSP56001	Motorola	
DTMF Integrated Receiver (CMOS)	G8870-1	CMD Micro	10	FDDI System Interface (provides multiframe, MAC-level interface to one or more MAC users)	DP83265	National		Graphics Buffer, Dual Port	μPD42275-10 μPD42275-12 μPD42275-80	NEC NEC NEC	
DUART	SCC2692 SCC8692	Signetics (3676) Signetics (3675)		FIFO/Write Buffer for Cache Interface	LR2020	LSI Logic		Graphics Color Palette (with 256x8 color map and video DAC)	AM8151A	AMD	85
Dynamically Programmed Timing Edge Vernier (4 to 40 ns delay)	Bt604	Brooktree (3404, 3406)		Floating Point Accelerator for LR2000-12 CPU (12.5 MHz)	LR2010-12	LSI Logic (3567)		Graphics Controller Chip (hardware windowing, 3 types CRT scanning: sequential, interlaced, sync, and interlaced sync and video)	HD64400	Hitachi	
Electronic Configurator (NV switch comparator and RAM), for remotely configuring equipment	DS1223	Dallas		Floating Point Accelerator for LR2000-16 CPU (16.7 MHz)	LR2010-16	LSI Logic (3567)	50	Graphics Floating Point Processor	TMS34082	TI	
Electronic Key (128-bit NVRAM) with security system, user insertion	DS1204U	Dallas		Floating Point Accelerator for LR3000-16 CPU (16.7 MHz)	LR3010-16	LSI Logic (3567)		Graphics Processor (off-loads host CPU for graphics)	TMS34010 TMS34020	TI TI	
Electronic Key (1024-bit NVRAM), user insertion	DS1201	Dallas	15	Floating Point Accelerator for LR3000-20 CPU (20 MHz)	LR3010-20	LSI Logic (3567)		Graphics Raster Graphics Processor (20 MHz)	DP8500	National	90
Embedded Processor, 32-Bit RISC Architecture	L64901	LSI Logic		Floating Point Accelerator for LR3000-25 CPU (25 MHz)	LR3010-25	LSI Logic (3567)		Graphics Signal Processor (50 MHz)	SMJ34010-50	TI	
Encoder/Decoder, CRC-4	R8075	Rockwell		Floating Point Accelerator for LR3000-33 CPU (33 MHz)	LR3010-33	LSI Logic (3567)		Graphics System Processor (32-bit fully programmable)	TMS34010-40 TMS34010-50	TI TI	
ENDEC, 6-Channel 1.7 (RLL) with Write Compensation	VM5601 VM5602	VTC VTC		Floating Point Accelerator (for R2000A CPU)	IDT79R2010A	IDT	55	Hard Disk Controller Interface	UM83C004	UMC	
Enhanced Floating Point Coprocessor (HCMOS)	MC68882	Motorola	20	Floating Point Accelerator (for R3000 CPU)	IDT79R3010	IDT		HD6301-Based Embedded Control System (up to 64K of lithium backed NVRAM for program/data storage)	DS2301	Dallas	95
Enhanced Local Area Network Controller	COM90C56	SMC		Floating Point Accelerator (32-bit)	79R2010 79R3010	Intel Intel		I/O Expander, Parallel	M66500	Mitsubishi	
Enhanced Read/Write Buffer Cache/Memory Interface for LR3000A	LR3230 LR3230-33 LR3230-40	LSI Logic (3567) LSI Logic LSI Logic	25	Floating Point Accelerator, 32-Bit RISC	IDT79R2010	IDT		I/O, Parallel (16 eight bit ports)	GD9620	GoldStar	
Enhanced VGA Compatible Graphics Chip	CL-GD5320	Cirrus		Floating Point Controller (FFC)	L64812	LSI Logic		I/O Port	CDP68HC68P1	Harris	
Error Correcting Code Chip	NCR82C50	NCR		Floating Point Controller (20 MHz)	NS32580-20	National	60	I/O Port, 8-Bit Bidirectional w/Handshake	AM2950A	Scorpion Tech	
Error Correction Code Processor	9707	Stac		Floating Point Controller (30 MHz)	NS32580-30	National		I/O, 8-Bit Bidirectional	MAS2952	GEC Plessey	100
Error Detection and Correction Circuit (16-bit)	AM29C60-1 AM29C60AB AM29C60AC	AMD AMD AMD	30	Floating Point Coprocessor	LR3020	LSI Logic		IBM PC/XT/AT Floppy Disk Formatter/Controller	MCS3201	Motorola	
Error Detection and Correction Unit, 32-Bit	IDT49C460C	IDT		Floating Point Coprocessor (HCMOS)	68881-12 68881-16 68881-20 MC68881	Micro-C Micro-C Micro-C Motorola		IEEE 488/Parallel/u Processor Interface to Serial/Pulse Position Modulation	GD5293	Greenwich	
Error Detection and Correction Unit, 32-Bit Flow-Through	IDT49C465	IDT		Floating Point Processing Unit	8232	Intel	35	Image and Signal Processing Subsystem (for 1-D and 2-D digital convolution and correlation)	IMSA110	SGS-Thomson	
Error Detection and Correction Circuit (16-bit)	AM2960A	AMD		Floating Point Processor	LR2010	LSI Logic		Input/Output Port	IL8212	Lansdale (3549)	
Ethernet/Cheapernet Transceiver	AM7996	AMD		Floating Point Processor Chip Set	F100893/94	National	70	Input/Output Port, 8-Bit	AM8212	AMD	105
Ethernet Chip Set (Ethernet data separator)	WD83C691	Western		Floating Point Unit (FPU)	L64814	LSI Logic (3569)		Integrated backup (combines non-volatile SRAM controlled with reset and a high capacity lithium cell)	bq2502	Benchmark	
Ethernet Chip Set (Ethernet I/O device)	WD83B692	Western		Floating-Point Processor, 32-Bit (separate 32-bit mult. and 32-bit ALU)	L64134	LSI Logic (3570)					
				Floating-Point Unit (64-bit mult., 64-bit ALU, 64-bit divide/Sq. Rt.)	L64804	LSI Logic (3569)					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)											
Integrated System Controller (Memory Control, Address Decode, Reset Logic) L64951 LSI Logic				Manchester Encoder/Decoder. HD6409/883 ♦† Harris				MIL-STD-1750A Microprocessor MAS281 GEC Plessey			
Inter-Frame Processor (CCITT video compression standard) L64760 LSI Logic (3571)				Manchester Encoder/Decoder HS15530RH ♦† Harris				MIL-STD-1750A Control Unit MAS17502 GEC Plessey			
Intgrated backup (combines non-volatile controller with reset and backup cell monitor outputs and a high capacity lithium cell) bq2503 ♦ Benchmark				Master Peripheral Controller YM7302 Yamaha				MIL-STD-1750A Execution Unit MAS17501 GEC Plessey			
IST Bus Interface Circuit PCB2310 Signetics				Memory Array Controller NCR52C40 ♦ NCR NCR52C60 ♦ NCR				MIL-STD-1750A Interrupt Unit MAS17503 GEC Plessey			
JPEG controller (variable length encoder/decoder) L64745 LSI Logic (3571)				Memory, Converts Byte Wide JEDEC to 3-Wire Serial Port DS1280 ♦ Dallas				MIL-STD-1750A Memory Management Unit MAS17504 GEC Plessey			
L-Bus Controller LR3202 LSI Logic (3567)				Memory Management and Protection Unit, MIL-STD-1750A (CMOS) P1753-20XM ♦† Performance P1753-30XM ♦† Performance P1753-40XM ♦† Performance				Mini-Packet Receiver/Transmitter, CMOS (MPRT) G24800 CMD Micro			
LAN Communications Processor (contains 16-Bit CPU, 2.75 Kbytes RAM) TMS38010 TI				Memory Management Unit/Cache Controller L64815 LSI Logic (3569)				Motherboard Frequency Generator AV9127 Avasem			
LAN Protocol Handler (performs hardware based protocol functions for 4 Mb/s token ring) TMS38020 TI				Memory Management Unit (part of SparKIT-20 chipset) L64821 LSI Logic (3569)				Multi-Port Repeater Unit Controller (for use in 10BASE5 and 10BASE2 networks) T7200 AT&T			
LAN Ring Interface Controller TMS38052 TI				Memory Management Unit (16K cache) MC88200 * Motorola				Multi-Port Repeater Unit (MPR2) T7201 AT&T			
LAN Ring Interface Transceiver (D and A circuitry to connect the adapter chipset to a 4 Mb/s token ring) TMS38051 TI				Memory, Quad Port Serial RAM (64-Bits per port) DS2015 Dallas				Multi-Protocol Communications Controller (up to 4 Mbps) R68560 Rockwell			
LAN (StarLAN Transceiver) XRT82C516 Exar XRT82515 Exar				Micro Channel Interface Unit (IBM PS/2 Micro Channel compatibility) MB86954 Fujitsu				Multibus II Message-Passing Coprocessor (MPC) VM82C389 VLSI Tech			
LAN System Interface Chip (provides up to 40 Mb/s data to host via DMA bus master transfer) TMS38030 TI				Micro Channel Interface, 16-Bit IC103 InfoChip Sys				Multifunction Peripheral With Real Time Clock, Asynch. Comm. Port, Parallel Port, ROM Disk IFL VG603 Vadem			
LCD/CRT Display Controller (with color palette 16/512 colors) V6355D-H Yamaha				Micro Channel Modem Controller (for IBM PS/2 models 50, 60, 80 and compatibles) EL2050 EdsunLabs				Multifunction 80188 Family Peripheral ASIC (compatible with 80188/80186 family, 8 MHz, dual serial ports/single parallel port, user interface for LCD, keypad, speaker driver, LED driver) MS2184 ♦ Systronix			
LCD VGA Controller (for Notebook Computers) CL-GD6410 Cirrus				Micro Softener Chip (converts SRAM into lithium backed NV program/data storage, compatible with HD6303X or Y processors) DS5303 Dallas DS5311 Dallas DS5340 Dallas DS5396 Dallas				Multilevel Pipeline Registers (four 8-Bit wide Registers) AM29520A * AMD AM29521A AMD			
LCD VGA Controller (with RAMDAC) SPC8100 S-MOS				Microprocessor, RISC (optimized for MIL-STD-1750A, UART) UT175AR ♦‡ UTMC				Multiple Analog I/O Port (4 input channels, 2 output channels) AD75016 AD			
Line Buffer, Dual-Port (5Kx8, asynchronous) µPD42505 NEC (3591)				Microprogram Controller CY2910AC Cypress RS5910A Harris				Multiple Bus Exchange (9-bit x 4 port) AM29C983AC ♦ AMD			
Logic Sequencer, 14x48x6 TIB825167BM TI				Microprogram Controller (CMOS) 29C10 ♦‡ Ideal Semi (3535)				Multiple Bus Exchange (9-bit x 4-port) AM29C983C ♦ AMD AM29C985C ♦ AMD			
Logic Sequencer, 16x48x8 TIB825105BM TI				Microprogram Sequencer (CMOS) 29C09A ♦‡ Ideal Semi (3535) 29C09B ♦‡ Ideal Semi (3535) 29C11A ♦‡ Ideal Semi (3535) 29C11B ♦‡ Ideal Semi (3535)				Multiplier/Divider, Quad AD834 AD (3346)			
MAC, 32-Bit MB92411 Fujitsu				Microprogram Sequencer, 16-Bit AM29C111 AMD				Multiprotocol Controller, Dual Channel SCN26542 Signetics SCN26562 Signetics (3673) SCN68542 Signetics			
Mailbox Memory (dual 128x8) M66222 Mitsubishi				Microsequencer, 16-Bit SN74ACT8818A * TI				Multiprotocol Processor (supports ISDN basic rate and terminal adaptor applications) MC68302 Motorola			
Mailbox Memory (256x8) M66220 Mitsubishi				MIL-STD-1553 Advanced Multiplexer (bus controller, remote terminal unit, and bus monitor) BUS61553 ILC-DDC BUS61555 ILC-DDC				Network Interface Controller DP8390D ♦ National NS32490D ♦ National			
Mailbox Memory (256x9) M66221 Mitsubishi				MIL-STD-1553 Bus Controller, Remote Terminal Unit, and Bus Monitor BUS65600 ILC-DDC BUS65610 ILC-DDC				Non-volatile controller with reset and backup cell monitor outputs (converts CMOS SRAM to non-volatile memory) bq2203 ♦ Benchmark			
Manchester Decoder and Interface (10 Mbp/s decoding) T7210 AT&T				MIL-STD-1553 to Microprocessor Interface Unit BUS66312 ILC-DDC				Nonvolatile controller circuit C1210 CMD Micro			
Manchester Encoder/Decoder MAS15530 GEC Plessey HD15530-8 ♦† Harris HD15530/883 ♦† Harris HD15531-8 *† Harris HD15531/883 *† Harris HD15531B-Cell Harris HD15531B-8 *† Harris HD15531B-9 * Harris HD15531B/883 *† Harris				MIL-STD-1553 Dual-Port RAM Controller MAS3692 GEC Plessey				Nonvolatile Controller (converts CMOS RAMs to nonvolatile storage) DS1210 ♦ Dallas DS1211 ♦ Dallas DS1212 ♦ Dallas DS1221 ♦ Dallas			
Manchester Encoder/Decoder. HD6409-CELL Harris								Nonvolatile Controller (converts CMOS static RAMs into nonvolatile memories) DS1234 Dallas			
Manchester Encoder/Decoder HD6409-9 ♦ Harris								Nonvolatile Controller (with rechargeable lithium cell input/output, converts CMOS static RAMs into nonvolatile memories) bq2201 ♦ Benchmark bq2202 ♦ Benchmark			

MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Peripheral Cache Manager	WD60C40	Western	35	Read/Write Preamplifier, 6-Channel (for ferrite heads)	VM310	VTC	
Nonvolatile Controller (with rechargeable lithium cell input/output, converts CMOS static RAMs into nonvolatile memories)	bq2204	◊ Benchmarkq		Peripheral Clamping Array	TCF6000	Motorola		VM310R	VTC		
Nonvolatile SRAM Plus Real Time Clock (2Kx8)	MK48T02	SGS-Thomson		Peripheral Driver Addressable	NE590	Signetics		Read-Write Buffer, Integrated, Cache-Main Memory Interface for LR3000-25 CPU (25 MHz)			
MK48T12	SGS-Thomson			NE591	Signetics			LR3220-25	LSI Logic (3567)		
Nonvolatile SRAM Plus Real Time Clock (8Kx8)	MK48T08	SGS-Thomson		Peripheral Interface Adapter	68A21	Micro-C		Real Time Clock			
MK48T18	◊ SGS-Thomson		5	MC6821	◊ Motorola		40	KS68C81	◊ Samsung		
Nonvolatile SRAM Plus Real-Time Clock (32Kx8)	DS1244	Dallas		EF68A21	SGS-Thomson			Real Time Clock/Calendar Module (seconds, minutes, hours, day, date, month and year)			
Nonvolatile SRAM Plus Real-Time Clock (8Kx8)	DS1243	Dallas		EF68B21	SGS-Thomson			RTM3	Catalyst Rsch		80
NRZI Encoder/Decoder, Dual Channel (with digital PLL)	USCSL2002	Universal		EF6821	SGS-Thomson			Real Time Clock Module wit non-volatile SRAM controller			
Object Contour Tracer (15 MHz)	L64290-15	LSI Logic (3570)						bq4287	Benchmarkq		
Optical Disk Controller (for ROM/WORM)	CL-SM330	Cirrus		Power Supply Monitor with RESET, NOT RESET and adjustable voltage detection				Real Time Clock plus NVSRAM			
CL-SM331	Cirrus		10	MAX700	◊ † Maxim		45	bq3287	Benchmarkq		
Optical Drive Encoder/Decoder	WD60C31	Western		MAX701	◊ Maxim			bq3287A	Benchmarkq		
Orthogonal Rotation Processor (performs rotation of font characters or blocks of bit-mapped data)	AM95C76	AMD		MAX702	◊ Maxim			Real Time Clock Plus RAM (NVRAM)			
Page Printer Interface Controller (for laser printers)	WD65C10	Western		Printer/Display Processor (10 MHz)				MK48T87	SGS-Thomson		
Panel Display Controller (EGA Compatible)	V6377	Yamaha		NS32CG16-10	National			Real Time Clock plus RAM (NVRAM) and RAM Clear			
Panel Display Controller (VGA Compatible)	V6388	Yamaha	15	NS32CG16-15	National			MK48T87A	SGS-Thomson		85
Panel Display/CRT Display Controller	V6366C-F	Yamaha		Priority Interrupt Controller	AM2914C	AMD		Real Time Clock plus RAM (replacement for IBM AT computer clock/calendar)			
Parallel/Asynchronous Communications Element (two UART's and port)	UM82C452	◊ † UMC		M8214	† Intel		50	bq3285	◊ Benchmarkq		
Parallel/Asynchronous Communications Element (UART and port)	UM82C451	◊ † UMC		SFC2914	SGS-Thomson			Real Time Clock plus SRAM Module (128 bytes)			
Parallel I/O Interface	KS82C411	Samsung	20	Priority Interrupt				MCCS146818BM	Motorola		
Parallel Interface Timer for MC68000 Systems	MC68230	• Motorola		IL8214	Lansdale (3549)			MCCS146818B1M	Motorola		
PC Address/Data Buffer Driver Circuit	SE2010X	Samsung		Processor Interface Circuit with Built-In System Test Feature (CMOS)				Real Time Clock plus SRAM (128 bytes)			
PC/AT Compatible Combination I/O Chip	VM82C106	VLSI Tech		P1754-20XM	◊ † Performance		55	MCCS146818B	◊ Motorola		
PC/AT Compatible CPU Core Logic Chip (80286-based)	FE3500	Western		P1754-30XM	◊ † Performance			Real Time Clock plus 4Kx8 NVSRAM Module			
PC/AT Page/Page Interleaved Memory Controller (for 386 systems)	MCS2300	Motorola		P1754-40XM	◊ † Performance			bq3387	Benchmarkq		90
PC/AT System Controller (for 386 systems)	MCS2500	Motorola		Programmable Clock Generator	DP8531	◊ National		Real Time Clock plus 4Kx8 SRAM			
PC Bus CPU and Peripheral Controller	FE2010A	Western		DP8532	◊ National			bq3385R	◊ Benchmarkq		
PC Bus Interface Controller	WD64C20	Western		Programmable Data Coder (Manchester phase encoding)	DC-7	Supertex		Real Time Clock plus 8Kx8 NVSRAM Module			
PC Bus Interface Unit (for LAN controllers)	MB86953	Fujitsu		Programmable DMA Controller	MAS8237	GEC Plessey		bq3487	Benchmarkq		
PC Printer Driver Circuit	SE2011X	Samsung		Programmable Encoder/Decoder (Manchester phase encoding)	ED-11	Supertex		Real Time Clock plus 8Kx8 SRAM			
PCM Codec/Filter, Monolithic, Serial Interface (CMOS)	C3052	CMD Micro		ED-15	Supertex			bq3485R	◊ Benchmarkq		
C3053	CMD Micro			ED-5	Supertex			Real Time Clock with non-volite SRAM controller			
C3054	CMD Micro			ED-9	Supertex			bq4825	◊ Benchmarkq		
C3057	CMD Micro			Programmable Encoder (Manchester phase encoding)	ET13	Supertex		Real Time Clock, 4-Bit (parallel I/O)			
				Programmable Event Generator (12 simultaneous events)	AM2971A	• AMD	65	μPD4991	NEC		95
				Programmable Frequency Generator	AV9101	Avasem		Real-Time Clock			
				AV9104	Avasem			TC8250A	Toshiba (3735)		
				Programmable Logic Device for Bus Interface Applications (64 mA high drive current)	PLX464	• PLX Tech		Real-Time Clock (full function real-time clock/calendar)			
			25	PLX464	• PLX Tech			DP8572A	National		
				Programmable Parallel Interface	MAS8255	GEC Plessey		DP8573A	National		
				Public Key Encryption Processor	CA34C168	† Newbridge (3593)	70	Real-Time Clock interface (allows time of day to be retrieved over μP bus)			
				PWM Generator (4 channel, 12-Bit)	M66242	Mitsubishi		C3008	Greenwich		
				PWM Generator (4 channel, 16-Bit)	M66240	Mitsubishi		Real-Time Clock Plus RAM (CMOS)			
			30	RAMDAC	MS176-35	Mosel		CDP6818A	Harris		100
				RAMDAC, For Hi-Res Graphics (speeds up to 200 MHz)	ATT20C458	AT&T (3390)		Real-Time Clock plus RAM (NVRAM)			
				Read/Write Buffer	LR3220	◊ † LSI Logic	75	DS1287	Dallas		
								1287	Micro-C		
								Real-Time Clock Plus RAM (replacement for IBM AT computer clock/calendar)			
								DS1285	◊ Dallas		
								Real-Time Clock (with interrupt signal generator and bus interface controller)			
								NJU6352	◊ NJR		
								Real-Time Clock (with RAM and power sense/control)			
								CDP68HC68T1	Harris		105
								Real-Time Clock with RAM and Serial Interface			
								MC68HC68T1	Motorola		
								Registers with Parity (9-Bit bidirectional)			
								USCSL6000	Universal		
								Reply Agent Address Error Generator for iLXB II Bus (provides complete address error signal generation including: alignment errors, width errors, etc.)			
								LBX2100	PLX Tech		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

• Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Serial I/O, A/D Converter (8-Bit with 2-input multiplexer)	ML2282BM	MicroLinear	35	Stand Alone Microsequencer, Programmable	SAM448-16	◊ † Waferscale (3750)	70
Reply Agent Control Interface to iLBX II Bus (provides data transceiver direction and output enable control signals)	LBX2000	PLX Tech		Serial I/O, A/D Converter (8-Bit with 4-input multiplexer)	ML2284BM	MicroLinear		SAM448-20	◊ Waferscale (3750)		
Reply Agent Error Generator for iPSB II Bus (provides complete memory/I/O error code generation)	PSB2100	PLX Tech		Serial I/O, A/D Converter (8-Bit with 8-input multiplexer)	ML2288BM	MicroLinear		SAM448-25	◊ Waferscale (3750)		
Reply Only Agent Control Interface for iPSB II Bus (provides data transceiver direction signals READ and WRITE)	PSB2000	PLX Tech		Serial I/O Controller, Parallel I/O Controller, Counter/Timer	ZB4C90	◊ Zilog		Subscriber Line Compensation Network	G24020	CMD Micro	
Reset/Interrupt Controller	LR3201	LSI Logic (3567)		Serial Input/Output Controller	ZB4C43	◊ Zilog		Successive Approximation Register, 8-Bit	25C02	◊ † Ideal Semi (3535)	
RISC Microprocessor	LR2000	† LSI Logic	5	Serial Interface Adapter (compatible with Ethernet/Cheapernet)	AM7992B	AMD	40	25C03	◊ † Ideal Semi (3535)		
	LR3000	◊ † LSI Logic (3568)		Serial Interface Protocol Chip, MIL-STD-1397, Type D and E	CT2500	GEC Plessey		Successive Approximation Register, 12-Bit	25C04	◊ † Ideal Semi (3535)	75
RISC Microprocessor, 32-Bit High Performance	LR3000A	LSI Logic (3567)		Serial Interface Real Time Clock	MK41T56	SGS-Thomson		Super Number Cruncher	MM57409	National	
RISC Microprocessor, 32-Bit with Cache Memory	VL86C020	VLSI Tech		Serial Memory Phantom Interface (adapts memory bus to three-wire serial port)	DS1206	◊ Dallas		Super VGA Graphics Controller (supports up to 1024x768, 16 colors)	ATT20C101	AT&T (3391)	
RISC CPU, Full 32-Bit	IDT79R2000A	IDT	10	Serial Network Interface Controller (SNIC)	DP83901A	◊ National	45	Synchronous SCSI Controller	MB87034	◊ Fujitsu	
	IDT79R3000	IDT		Serial Real Time Clock (64 bytes RAM)	MCCS1850	Motorola		Synchronous Serial Data Adapter	6852	Micro-C	
RISC CPU Processor (32-Bit)	79R2000	◊ † Intel		Shading Processor (for 3-D and 2-D graphics functions)	TC8512	Toshiba		System Timing Controller	AM9513A	◊ AMD	80
	79R3000	◊ † Intel		Signal Processing Interface (Microcomputer including 16x16 Multiplier, RAM, ROM for rapid signal processing)	S77C20	Gould AMI (3498)	50	Systems-Oriented Network Interface Controller	DP83932	◊ National	
Safety Critical Microprocessor	MAS1908	GEC Plessey			μPD77P20	NEC		TAXIchip (Transparent Asynchronous Xmitter-Receiver Interface)	AM7968	* AMD	
Safety Critical Microprocessor (dual operation)	MAS1909	GEC Plessey			μPD7720	NEC		AM7969	AMD		
SBus Graphics Chip (with video RAM controller)	L64855	LSI Logic (3569)	15	Signal Processor, Cascadable (for digital FIR filtering, adaptive filtering, correlation and convolution)	IMSA100M	† SGS-Thomson		Testability Interface Device (real-time)	LT74TC32	◊ † LSTI	85
Scaler/Orthogonal Rotator Element (raster data processor, accelerator for image viewing/printing)	BT710	Brooktree		Small Computer System Interface (SCSI) Controller	MSD95C00	SMC		LT74TV32	◊ † LSTI		
SCAMP Power Management Unit (for use with VL82C310 System Controller)	VL82C312	VLSI Tech		Smart Socket (nonvolatile Ram control) with socket, battery	DS1213	Dallas		Testability Interface Device (serial)	LT74TC16	◊ LSTI	
SCSI Bus Controller	L53C80	◊ † LogicDev			DS1213C	Dallas		LT74TV16	◊ LSTI		
	L5380	◊ † LogicDev		Smart Watch (watch or clock, nonvolatile RAM control) with socket, battery	DS1216	Dallas	20	Testable Functional Circuit (provides circuit functions while providing the capability of a testability bus port)	LT74TC32PC	LSTI	
SCSI Bus Interface Controller, Enhanced	AM33C93A	AMD			DS1216C	Dallas		LT74TV32PC	LSTI		
SCSI Controller (6, 8, 10 Mb/sec)	KS53C94	◊ Samsung		SmartSocket, Contains Embedded Lithium Cell for RAM Retention	DS1213D	Dallas		Time Key with Security Clock (384-Bit NVRAM)	DS1207	Dallas	90
	KS53C95	◊ Samsung		SmartWatch, Calendar/Clock with Embedded Lithium Cell	DS1216F	Dallas	25	Timekeeper (watch or clock, nonvolatile RAM control)	DS1215	Dallas	
SCSI Interface Circuit	L5380C	◊ † LogicDev		SPARC Floating Point Controller (16.7 MHz)	MB86910	Fujitsu		Timer Clock Peripheral (full function real-time clock/calendar)	DP8570A	National	
SCSI Protocol Controller	MB87033B	Fujitsu (3479)		SPARC Memory Management Unit (20 MHz)	MB86920-20	Fujitsu	60	DP8571A	National		
	MB87035	Fujitsu		SPARC Memory Management Unit (25 MHz)	MB86920-25	Fujitsu		TRANputer Module (IMS T222 16-Bit transputer)	IMS B409	SGS-Thomson	
	MB89352	Fujitsu		SPARC, 40 MHz 32-Bit SPARC Integer Unit	CY7C601-40C	* Cypress		TRANputer Module (IMS T800 transputer, 1 MB DRAM, 1 MB dual-port DRAM)	IMS B408	SGS-Thomson	95
SCSI 2 Controller	MB86602	Fujitsu		Speech Processor, ADM (record/reproduce)	TC8830	Toshiba	30	UART with FIFOs (16 byte FIFO register)	SSI73M1550	SiliconSys (3688)	
SCSI 2 Controllers with Drivers	MB86601	Fujitsu		TC8831	Toshiba			SSI73M550	SiliconSys (3688)		
Serial Bus Interface	CDP68HC68S1	Harris		Speech Synthesis, ADM, 256K Bit ROM	TC8801	Toshiba	65	UART with FIFOs (16 byte register)	SSI73M2550	SiliconSys (3688)	
Serial Communications Controller	CA85C30	Newbridge		Speech Synthesis, ADM, 64K Bit Mask ROM	TC8802	Toshiba		UART, Dual with Floppy Disk Controller and Parallel Port	PC87310	◊ National	100
Serial Controller Interface	CA82C52	Newbridge (3593)		ST-Bus Parallel Access Circuit	MT8920	◊ Mitel		UART (Quad Channel)	XR82C684	Exar	
Serial Convoier	MA7178	GEC Plessey						Undervoltage Sensing Circuit (reset controller for microprocessor-based systems)	MC34064	◊ Motorola	
Serial Data Receiver	LIU01	AD									
Serial I/O, A/D Converter (8-Bit with single differential input)	ML2281BM	MicroLinear									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MICROPROCESSOR—System Components (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
General Purpose (Cont'd)				Video Frame Controller(part of Mipset)	LR3208	o† LSI Logic (3567)		Write Buffers, 32-Bit RISC	IDT79R2020	o‡ IDT	
Universal Asynchronous Receiver/Transmitter (UART)	CDP6402	• Harris		Video Graphics Controller	VM82C037	VLSI Tech	35	Single Chip Floating Point Processor (ANSI/IEEE STD754)	B2130	Bipolar	70
	CDP6402C	• Harris		Video Processor (Subtraction, Overlay and Storage)	67149	OEI			B3130	Bipolar	
	M66230	Mitsubishi							B4130	Bipolar	
	NS16C451	National		Video RAM Controller/Driver (up to 1 Mbit)	DP8521	National		Dual Asynchronous Communications Interface Adapter (68000 bus compatible)	R68C552	Rockwell	
Universal Asynchronous Receiver/Transmitter with Baud Rate Generator	COM81C17	SMC	5	Video RAM Controller/Driver (up to 256K bits)	DP8520	National		Dual Bus Interface Circuit, MIL-STD-1553 Applications	R1553	Rockwell	
Universal Asynchronous Receiver/Transmitter (2-channel)	COM78C802	SMC		Video RAM Controller/Driver (up to 4 Mbit)	DP8522	National		Dual UART (10, 12.5, 16 MHz)	KS82C450	o Samsung	75
Universal Asynchronous Receiver/Transmitter (4-channel)	COM78C804	SMC		Video System Controller (video dot clock rate to 80 MHz)	AM8152A	AMD	40		KS82C450A	o Samsung	
Universal Asynchronous Receiver/Transmitter (8-channel)	COM78C808	SMC		Video-Pulse Generator	TBB278A	Siemens		Dual Universal Asynchronous Receiver/Transmitter (with FIFO)	NS16C552	o National	
Universal Asynchronous Receiver-Transmitter	ST16C450	Startech		VMEbus Address Controller	VAC068	VTC			PC16552C	o National	
Universal Asynchronous Receiver-Transmitter with FIFO	ST16C550	Startech	10	VMEbus Interface Chip, ACC	CA91C014	Newbridge (3593)			PC16553	o National	
Universal Asynchronous Receiver-Transmitter, Dual	ST16C2450	Startech		VMEbus Interface Chip, DARF	CA91C015	Newbridge (3593)	45	Dual USRT (10, 12.5, 16 MHz)	KS82C452	o Samsung	
	ST16C2550	Startech						Triple 6-Bit DAC, Video Color Palette, 40 MHz	MS176-40	Mosel	80
	ST16C452	Startech		VMEbus Interrupt Generator	VME3000	PLX Tech	15	Triple 6-Bit DAC, Video Color Palette, 50 MHz	MS176-50	Mosel	
	ST16C552	Startech		VMEbus Interrupt Handler (monitors all seven interrupt levels)	VME4000	PLX Tech		Quad Pixel Dataflow Manager (generates mixed text and graphics within display memory)	AM95C60	AMD	
Universal Asynchronous Receiver-Transmitter, Four (with FIFO)	ST16C554	Startech		VMEbus Master Controller (two device chipset for non-slot 1 master bus controller)	VME1220	PLX Tech		Quad Raster Op ALU (QRO)	VL82C164	VLSI Tech	
	ST68C554	Startech		VMEbus Master Controllers (two device chipset for slot 1 master bus controller and single level arbiter)	VME1210	PLX Tech		Quad Universal Asynchronous Receiver/Transmitter	SC26C94	Signetics (3674)	85
Universal Peripheral Controller (2 serial control units, prog. timer counter unit, prog. parallel interface unit, prog. interrupt control unit)	μPD71101	NEC		Voltage Controller (converts CMOS RAMs to nonvolatile storage)	DS1215	Dallas	50		SC68C94	Signetics (3674)	
Universal Synchronous/Asynchronous Receiver Transmitter	MAS8251A	GEC Plessey		Voltage Regulator Controller, watch dog timer and power-on reset	HA1835	Hitachi	20	Eight-Channel Multiplexed Sample and Hold	SSM2300	AD (3354)	
UPC/EAN Scanner	NCR8415	NCR		VXI Bus Message-Based Interface Chip	IT9010	Interface Tech		Z80 CPU, 2 Kbytes SRAM, Clock Generator Controller	Z84C50	o Zilog	
Vector Processor, 32-Bit	SN74ACT8867	TI			IT9010M	Interface Tech		Z80 MPU (10 MHz), Clock Generator Controller, Counter/Timer, I/O	Z84C01	o Zilog	
VGA Graphic Chip (for IBM OS/2 and IBM PC/XT/AT/AT386 compatible systems)	POACH/VGA-50	ZyMOS		V40-Based Embedded Control System (up to 256K of lithium backed NVSRAM for program/data storage)	DS2340	Dallas	55	32-Bit Programmable Window Filter	CA29C632A	Newbridge (3593)	90
VGA Graphics Controller (Hi-Res, up to 1024x768, 16 colors)	CL-6D5410	Cirrus (3428)		Watchdog Timekeeper (NV real-time clock, 50 bytes RAM, alarm, watchdog timer, and interval timer)	DS1286	Dallas		32-Way INMOS Link Crossbar Switch.	IMSC004	• SGS-Thomson	
VGA Graphics for 80386 Based Systems (compatible with EGA, CGA, MDA and Hercules)	ZyVGA-50	ZyMOS		Watchdog Timekeeper (real-time clock, 50 bytes RAM, alarm, watchdog timer, and interval timer)	DS1284	o Dallas	25	2M Band UART with RISC Interface, Direct Interface with RTX 2000/2001A Buses, CMOS	RTX2152	Harris	
Video Clock Generator (for medium to high performance CRT graphics systems)	DP8512	National		Winchester Subsystem Superchip (host interface, drive controller, microcontroller interface, buffer manager, data separator)	WD42C22	Western	30	386DX Chipset (includes: VM82C330 System Controller, VM82C331 ISA Bus Controller, and VM82C332 Data Buffer)	VM82C386-SET	VLSI Tech	
Video DAC (TV/video displays and feed-forward A/D systems)	CA3338	Harris			WD42C22A	Western			LC86104A	Sanyo	
Video DAC, Triple 8-Bit Color Palette	SC11453	Sierra		Write Buffer, Cache-Main Memory Write Interface for LR2000-12 CPU (12.5 MHz)	LR2020-12	LSI Logic (3567)	60	80286/80386SX Cache Controller (works with TOPCAT and SCAMP-LT chipsets)	VL82C325	VLSI Tech	
Video Data Assembly FIFO (supports smooth panning and hardware windows)	AM8172	AMD			LR2020-16	LSI Logic (3567)					
Video Display Processor (RGB/ Composite Video Output)	V9938C	Yamaha			LR3020-16	LSI Logic (3567)					
Video Display Processor (RGB Linear output)	V9958	Yamaha			LR3020-20	LSI Logic (3567)					
Video Frame Averager (512 x 512 x 8)	67156	OEI			LR3020-25	LSI Logic (3567)					
Video Frame Buffer, 100 MHz (suports 256Kx4, 128Kx8, and 64Kx4 video RAMs)	L64825	LSI Logic (3569)		Write Buffer (for R2000A CPU)	IDT79R2020A	IDT	65				
Video Frame Buffer (512 x 512 x 8)	67145	OEI		Write Buffer (for R3000 CPU)	IDT79R3020	IDT					
Video Frame Controller (part of Mipset) 25 MHz	LR3208-25	o† LSI Logic		Write Buffer (8-Bit)	79R2020	o† Intel					
					79R3020	o† Intel					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

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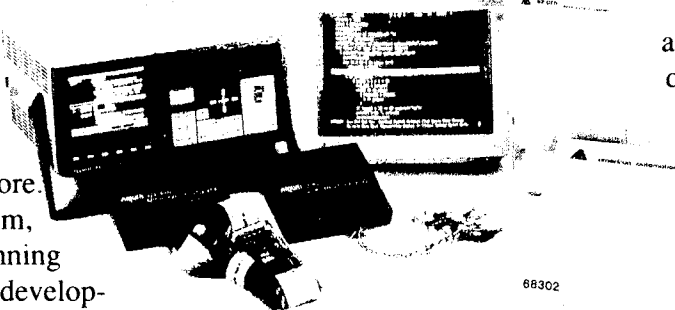
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INTRODUCTION TO MICROPROCESSOR DEVELOPMENT SYSTEMS

This section describes the tools used in developing software programs for microprocessors. Microprocessors supported range from 2-bit slice families and 4-bit processors to 32-bit machines. Development systems described in the Master Selection Guide range from simple, single-user text-editing stations to multi-user computers dedicated to software development. Manufacturers are sequenced alphabetically, and each system is described by a listing of performance parameters.

MPU DEVELOPMENT SYSTEMS

Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk			Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)	Capacity (Kbytes)			
1802/05/05AC/06, 64180R0/R1/Z, 6301V1/01X0/63701V0/63701Y, 6303R/03V1/03X/03Y/03Y0, 6309/09E, 6502/C02/03/04/05/06/07/10/12/13/14/15, 6800/02/08, 6801/01U4/68701/68701U4/03/03U4, 68HC05C4/C8/D2/P1, 6805 ASIC, 1468HC05E2/E3, 6809/B09/09E, 68HC11A0/A1/A8/E1/E2/E9, 68000/68008/68010, 8035/39/C39/40/48/8749/C49/50, 8051/51AH/C51/C51BH/C51FA (80C252), 8751/51H/51BH/C51, 8052/52AH/C52/52BH/C52T2, 87C52/52BH, 8031/31AH/C31/C31BH, 8032/32AH/C32/32BH/C32T2, 80C154/83C154/85C154, 8344/44AH, 8053AH/8753H, 80515/535, 80C152JA/C152JB/C152JC/C152JD, 80C321, 80C451, 80C552, 80C325, 80C452, 80C652, 8085/8085AH-2/80C85, 8086/80C867, 8088/80C88, 8096/97/8396/8397/8098/80C196, 8X300/305, NSC800, V20/30, Z80A/Z80B/Z80H, 80186/80C186 (16 MHz), 80188/80C188 (16 MHz), Z180	1	1	N/A	64 (1 MB for 80286)	192	As per host	As per host	As per host	as per host	x	Opt.	Opt.
ZA03, 6301R/X/Y/COLY/701Y, 6303 R/X/C03Y, 6309/E, 64180R0, 6502/ C02 (4MHZ), 6800/ 02/08, 6801/03/U4, 68HC05C4/C8/705C8/805C8, 68HC05DZ, 146805E2/E3, 6809/E, 68HC11A0/A1/A8, D3/E1/E2/E9/F1/, 8031/AH/C31/C31BH, 8032/AH/C32T2/BH, 8051/C51/AH/BH/FA, 80C52/AH/BH/T2, 80C154, 80C252, 80C321, 80C515, 80535, 80C552, 80C652, 8344/AH, 83C154, 85C154, 8751/H/BH/C51/, 87C52/H/BH, 8035, 8039/C39, 8040, 8048,8748, 8049,/C49, 8040, 8085/C85, Z80 (10MHZ) NSC800	1	1	N/A	64	64	As per host	As per Host	As per Host	As per Host	x	x	
180ZBC, 1805AC, 1806, 64180R1,/Z, 68000/HCO00, (16.7 MHE) 68010, 8086/C86, 8088/C88, 80186/C186, 80188/C188, 8096, 8396, 8796, 8097, 8397, 8797, 80194, 806196 KB/KC, 80198, Z180,	1	1	N/A	64	256	As per Host	As per Host	As per Host	As per Host	x	Opt.	x
86C010			488		1 MB	As per Host	As per Host	As per Host	As per Host	x		
ADSP2100A (50 MHz)	1											
8051, 68HC11	1	1		64	64					opt.		
Z80A, Z80H, 64180	1	1		64	1 MB							
8035, 8039, 8040, 8048, 8050, 8748, 8749, 8080, 8085, Z80, MK3880/4, NSC-800	1	1		64	64							
68000, 68008, 68010, 68020, Z8001, Z8002, 8086, 8088, 80186, 80188, 80286, 80C86, 80C88, 80C186, 80C188	1	2		128	2 MB					opt.		
8051, 8031, 8751, 8052, 8032, 8752	1	1	0	48		As Per Host	As Per Host	As Per Host	As Per Host		Opt.	
8051, 8031, 8751, 80C51, 80C31, 87C51	1	1	0	4—28		As Per Host	As Per Host	As Per Host	As Per Host		Opt.	
8051, 8031, 8751, 8731, 8052, 8044, etc.	1	0	0	48		As Per Host	As Per Host	As Per Host	As Per Host		Opt.	
RTX2000, RTX2001A, RTX2001				192	192							

Software Support		Comments	Model	Source	Line
Standard	Optional				
Macro Cross-Assembler, Relocating Linker, Symbolic Debugger	C Cross-Compilers w/Source-Level Debugging, performance analysis hardware and software.	Over 80 microprocessors supported on the IBM PC; many are also supported on the Sun Workstation, Macintosh II and VAX systems.	EZ-Pro	Am Arium (450)	
Macrocross assembler, Relocating Linker, Symbolic debugger.	C Cross Compilers W/Source-level debugging	Hosted on IBM AT and compatibles	EZ-Pro 1.5	Am Arium (450)	
Macro Cross Assembler, Relocating Linker, Symbolic Debugger	C Cross Compilers W/Source-Level Debugging, Performance Analysis hardware and software	Hosted on IBM AT and compatibles.	EZ-Pro 2.1	Am Arium (450)	
Macro Cross Assembler	C Cross Compiler w/ source-Level SDebugging, Performance Analysis hardware and software	Hosted ou IBM AT and compatibles, 40-Bit time stamp w/25 ns resolution.	EZ-Pro 3.7	Am Arium (450)	
		In-Circuit Emulator with Trace Buffer	ADDS2100A-ICE	AD	
Menu-driven emulator control software.	Compilers, assemblers, and other utility software available for a variety of languages.	Real-time transparent emulation, advanced breakpoint system, trace memory.	EC 7000	AppMicroSys	5
Menu-driven emulator control software and symbolic debugger.	Compilers, assemblers, and other utility software available for a variety of languages.	Real-time transparent emulation with up to 1 million breakpoints, advance breakpoint system, 8Kx48-bit trace memory.	EL 800	AppMicroSys	
Software for operation of the emulator is supplied.	Remote control and symbolic debug package for MS/DOS operating systems.	Stand-alone in-circuit emulator. Real-time trace: 32 bits wide, 256 traces deep with disassembly. Diagnostic functions: standard and user-defined for debugging hardware in design, test and service.	EM Series	AppMicroSys	
Full high-level and symbolic debug packages available for various hosts (SUN, APOLLO, VAX, PC, and MicroVAX.	Compilers, assemblers, and other utility software is available for a variety of languages.	Stand-alone or hosted in-circuit emulator, real-time and transparent operation, diagnostic functions, in-line assembler, memory and trace disassembler, real-time trace (2048x72 bits).	ES Series	AppMicroSys	
Debugger	Cross Assembler	Emulation not real-time, In-Circuit hardware emulation.	dICE-51	Cybernetic	
Debugger	Cross Assembler	Real-Time Emulation in-circuit, CMOS option.	d2 ICE-51	Cybernetic	10
Debugger	Cross Assembler	Software simulation only, no hardware emulation.	Sim 8051	Cybernetic	
		Memory expansion for RTX DS and RTX DB.	RTX-MX192	Harris	

Bold face indicates additional data is provided on the page noted.

IC MASTER

MPU DEVELOPMENT SYSTEMS (Cont'd)

Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk			Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)	Capacity (Kbytes)			
RTX2000, RTX2001A, RTX2001				64	192							
RTX2000, RTXA001A, RTX2001	1	1	1	64	1 MB							
RTX2000-8, RTX2001A-8, RTX2001	1	1	1	64	1 MB							
RTX2000, RTX2001, RTX2001A	1	1	1	64	1 MB							
RTX2000, RTX2001A, RTX2001	1	1	1	224	1 MB							
F9450, HD6301V/6303R, HD6303R/X/Y, 8048/49, 8085, 80286 hosted on the HP 64100, 80386, 6800/68A00/68B00, 6803/ 6808, 6801/6803, 6809/68A09/68B09, 6809E/68A09E/68B09E, 68008, 68020, 68HC11, 70116/70216, 70108/70208, TMS32010/320M10, Z8001, Z8002, Z80, PACE1750, User Definable	6/cluster 16/Host computer	4	2	4 MB	6 MB			Opt.	55 M	See comments	Opt.	Opt.
80C521/80C321, 64180/64180X, H16; 8051/8751/8031, 8085, 8086/8087/ 80C86, 8088/80C88/8087, 80186, 80C186, 80188, 80C188, 80C196, 68000, 68HC000, 68010, V25, NSC32532/32GX32, TMS32020, TMS320C25, Z80	16	2								x		
All bit slices, 2901, 2903, 29203, 29501, 29116, 8X300, 8X305, 74S481, 3000, and macrologic. Also ECL10800, 10220. 1 to 4 WCS arrays.	4	3	1	512	160	2	5.25	2M		x	x	x
All Microcode devices (e.g., 29116, 2901, 29300, 29500, AS888, 2910, AS890, 29PC141, Weitek 1064)	1	3	2	640	640	1	5.25	1.4M	20 MB	x	Opt.	Opt.
All Microcoded Devices (e.g., 29116, 2901, 29300, 29500, AS888, 2910, AS890, 29PC141, Weitek 1064), All Bit-Slice Devices	1	3	2	640	640	2	5.25	740		x	Opt.	Opt.
All Microcoded Devices (e.g., 29116, 2910, 29300, 29500, AS888, 2910, AS890, 29PC141, Weitek 1064), All Bit-Slice Devices	1	3	2	640	640	1	5.25	370	10 MB	x	Opt.	Opt.
All Microcoded Devices (e.g., 29116, 2901, 29300, 29500, AS888, 2910, AS890, 29PC141, Weitek 1064)	1	3	2	640	640	2	5.25	740 K		x	Opt.	Opt.
Any	1	3	1			2	5.25	360	20 MB	x		
EC-1000	1	1								x		opt.
EM29PL141	1	3	2	640	640	1	5.25	1.4M	20 20 M	x	opt.	opt.
MIPS R2000, IDT79R2000	32	32		16 MB	80 MB				689 MB			
MCS-86, MCS-85, MCS-80 and MCS-48 families	1				64			250			Opt.	Opt.
8080A, 8085A, 8086 (iAPX86), 8088 (iAPX88), 8089, 8021, 8022, 8041A, 8741A, 8035, 8048, 8748, 8039, 8049, 8051	1	2	4			1		250			Opt.	Opt.
8080A, 8085A, 8086 (iAPX86), 8088 (iAPX88), 8089, 8021, 8022, 8041A, 8741A, 8035, 8048, 8748, 8039, 8049, 8051	1	2	4		64			250	7.3 MB		Opt.	

Software Support		Comments	Model	Source	Line
Standard	Optional				
		Memory expansion for RTX DS and RTX DB.	RTX-MX64	Harris	5
RTX Development Board Monitor.	C-Cross Compiler, RTX FORTH, RTX DS	IBM XT or AT Based Development System.	RTXDB-10	Harris	
RTX Development Board Monitor.	C-Cross Compiler, RTX FORTH, RTX DS	IBM XT or AT Based Development System.	RTXDB-8	Harris	
RTX DS Software: LMI FORTH, FORTH Cross Compiler, editor, disassembler, emulator.	C-Cross Compiler, RTX FORTH, RTX DS	IBM XT or AT Based Development System.	RTXDS-10	Harris	
RTX DS Software: LMT FORTH, FORTH Cross Compiler, editor, disassembler, emulator	C-Cross Compiler, RTX FORTH.	IBM XT or at Board Development System.	RTXDS-10MX	Harris	
Operating software supplied with each subsystem.	C, Assemblers, Linkers	Logic Development System: 200/400 MHz Timing/125 MHz state 8 to 32 channels. 20 to 120 channels of state analysis. Real-time high-level analysis. Software performance analysis. Structured Analysis/Design; Basis Branch Analysis; ADA supported	HP64000-UX	HP	10
Operating software supplied with each subsystem.	C, Assemblers, Linkers	Logic development system; 100 MHz; Timing/25 MHz state, 16 channels, coverage analysis, emulation bus analysis; coverage analysis.	HP64700	HP	
MENU Prompts: Editing, Target Control, Remote operation, display formatter, diagnostics, download models, TRACE dump, multiple arrays.	Universal meta-assembler up to 80 bits, MACRO's FORTRAN IV compatible or CP/M version.	Performance analysis measures target activity in 16 user categories. TRACE has 16-level Trigger logic.	DS370	HiLevel	
PC utilities, EPL programming language, patchwork-source code editor, META disassembler, PCTERM-VT100 terminal emulator	HALE-relocatable Linkable MACRO META assembler, EPL-VMS & EPL-UNIX programming language for VAX, DU-VMS, UNIX upload/download for VAX	Also available are in-circuit emulators for 29116, 2910, AS888 and AS890.	DS3700/CSIBM-AT	HiLevel	
PC Utilities, EPL-Programming Language, Patchwork-Source Code Editor, META Disassembler, PC TERM-VT100 Terminal Emulator	HALE-Relocatable, Linkable, MACRO META Assembler, EPL-VMS & EPL-UNIX Programming Language for VAX, DU-VMS, UNIX Upload/Download for VAX	Also available are in-circuit emulators for 29116, 2910, AS888, and AS890	DS3700/CSIBM-PC	HiLevel	
PC Utilities, EPL-Programming Language, Patchwork-Source Code Editor, META Disassembler, PC TERM-VT100 Terminal Emulator	HALE-Relocatable, Linkable, MACRO META Assembler, EPL-VMS & EPL-UNIX Programming Language for VAX, DU-VMS, UNIX Upload/Download for VAX	Also available are in-circuit emulators for 29116, 2910, AS888, and AS890	DS3700/CSIBM-XT	HiLevel	15
PC Utilities, EPL-programming language, patchwork-source code editor, META disassembler, PC TERM-VT100 terminal emulator	HALE-Relocatable Linkable MACRO META Assembler, EPL-VMS & EPL-UNIX Programming Language for VAX, DU-VMS, UNIX-Upload/Download for VAX	Also Available are in-circuit emulators for 29116, 2910, AS888 and AS890.	DS3700/CSTI-PC	HiLevel	
Menu-driven operating system		Logic State Analyzer, 256 Channels x 4K	DT3700	HiLevel	
Menu Prompts: Editing target control, remote operation, display formatter, diagnostics, download models, TRACE dump, multiple arrays	HALE-relocatable Linkable MACRO META assembler, EPL-VMS & EPL-UNIX programming language for VAX, DU-VMS, UNIX upload/download for VAX		EC1000	HiLevel	
PC utilities, EPL programming language, patchwork-source code editor, META disassembler PCTERM-VT100 terminal emulator	HALE-relocatable Linkable MACRO META assembler, EPL-VMS & EPL-UNIX programming language for VAX, DU-VMS, UNIX upload/download for VAX		EM29PL141	HiLevel	
UMIPS Operating System (Unix system V and BSD 4.3), includes Utilities, C,Pascal	Fortran/V or BSD System Programmers Package, NFS/V or BSD, Fortran Compilers/V or /BSD	Tape Drive (9 track) cartridge at 6250/1600 bpi, 180 MB	M/1000	IDT	
ISIS-11 disk operating system with relocating macroassembler, linker, locator, and CRT-based CREDIT editor.	iPDS-FTRANS option enables file transfer between iPDS and any Intellec Development System. PL/M, FORTRAN, BASIC, PASCAL and COBOL software packages available.	Self-test diagnostic capability, built-in interfaces for high-speed paper tape reader/punch, printer and universal PROM programmer. iMDX557, iAPX resident processor card package is available to upgrade existing iMDX225 series II Development System to Series III. This package supports development of iAPX86/88 processors.	iMDX225	Intel	
ISIS operating system, credit full screen copier, macroassembler for 8086/88 and 8080/85, linker and loader, debug-86 debugger.	Pascal, FORTRAN, PL/M, COBOL, BASIC, assemblers for 8089, 8048, 8051 families, utility packages for 8080/85/86/87/88/89 support mainframe link software.		IntellecIII	Intel	
ISIS 11 disk operating system; ASM-80 macroassembler for 8080, 8085; credit editor; link and locate utilities.	PL/M-80, FORTRAN, PASCAL, BASIS, COBOL, Utilities FSP arithmetic package for 8080 and 8085; AMS-86 macroassembler, PL/M-86, link and locate utilities for 8086; assemblers for 8048 and 8089.	In-circuit emulators for all CPUs.	INTELLEC11-MODEL245	Intel	

Bold face indicates additional data is provided on the page noted.

MPU DEVELOPMENT SYSTEMS (Cont'd)

Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk			Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)	Capacity (Kbytes)			
8080A, 8085A, 8086 (iAPX86), 8088 (iAPX88), 8089, 8021, 8022, 8041A, 8741A, 8035, 8048, 8748, 8039, 8049, 8051	8	2	4								Opt.	Opt.
Work station dependent	8	1	2	256		2						Opt.
LR3000 MIPS Architecture	4	4		16 MB	48 MB	1	1/4 Tape	120 MB	325 MB			Opt.
LR3000(A) LR33000	2	2	7	8000	32000				400			
LR3000(A) LR330000	Unlim	2	7	8000	32000				400			
L64801, L64811, SPARC Architecture	1	2		8 MB	16 MB	1	1/4" Tape	150 MB	208 MB			Opt.
HD64180/Z180-8 MPU	1	1		64	64							
Z80-8 CPU	1	1		64	64							
TMS320C15-25 DSP	1	1		8	8							
TMS320C25-50 DSP	1	1		32	12							
TMS370C26 DSP	1	1		32	128							
TMS320E14 DSC	1	1		8	8							
TMS370CXXX MCU	1	1		16	16							
HD64180-10 NPU	1	1		64	64							
WDC65C02-10 CPU	1	1		64	64							
HD647180X-8 MCU	1	1		64	64							
PIC16C5X	1	0	1	4	8						x	
PIC16C5X	1	0	1								x	
Z80	1	1		64							x	
64180, 68HC11	1	1		64							x	
MCS-51 Family	1	1		64							x	
68000, 68008, 68010	1	1		128	1.5 MB							
iAPX-86 (86/88, 186/188, 286)	1	1		32	1 MB							
DSP56000, DSP56001	1	1		8				As per Host	As per Host			
M6805, M146805, M6804	1	1	1	8								
MC68HC11, MC6809, MC6801, MC6803, MC68010	1	2	2	32	256	1	5.25	655		1		opt.
MC68000	1	1	1	32	256							
MPU6805 Core		1		As Per Host	As Per Host			As Per Host	As Per Host			
MC68HC05B4/B6, MC68HC05C2/C3/C4/C8, MC68HC06L6, MC68HC705C8, MC68HC805C4, MC68HCL05C4/C8	1	1		As Per Host	As Per Host			As Per Host	As Per Host			

Software Support		Comments	Model	Source	Line
Standard	Optional				
ISIS operating system at workstations, MDS-I operating system at network manager.		Network manager provides shared hard disk and printer spooling for use by up to 8 stations.	NDS-I	Intel	5
High level language debugging network, management tools, export/import software, Ethernet Protocol.		Network resource manager provides shared Winchester hard disk, Model 740 cartridge disks and spooled line printer interface for work stations. All existing Intel development systems can be upgraded to be NDS-II work stations. Work stations communicate with the network resource manager via 10M bit Ethernet or local net interconnected with coax.	NDS-II	Intel	
RISC/OS, C	PASCAL, FORTRAN, ADA, COBOL, PL/1		M/120	LSI Logic	
RISC/OS RISC Windows C Compiler	X Windows		Magnuma	LSI Logic	
RISC/OS RISC Windows C Compiler	X Windows		RC3220	LSI Logic	
SUN/OS, C	PASCAL, COBOL, FORTRAN, C, ADA		SPARCstation1	LSI Logic	10
Assembly C		Software included.	MRZ180-8	Macrochip	
Assembly C		Software included.	MRZ80-8	Macrochip	
Assembly		Software included.	MR320C10-25	Macrochip	
Assembly C		MS/DOS Software included.	MR320C25-50	Macrochip	
Assembly C		Software included.	MR320C26-40	Macrochip	15
Assembly		Software included.	MR320E14-20	Macrochip	
Assembly		Software included.	MR370-20	Macrochip	
Assembly C		Software included.	MR64180	Macrochip	
Assembly C		Software included.	MR65C02-10	Macrochip	
Assembly C		Software included.	MR7180-8	Macrochip	20
PICALC Assembler, PICSIM Simulator		Real-Time Emulator with 4K Trace Buffer. PC Host. MSDOS	PIC-ICE	Microchip	
PICALC Assembler, PICSIM Simulator		Low cost development tool consisting of PC-Based Simulator and EPROM Programmer	PIC-PAK	Microchip	
Interface Software	ASM, Link/Locate, Source Debugger	Uses Host system for applications	Ash-Z80	Microcosm	
Interface Software	ASM, Link/Locate, Source Debugger	Uses Host system for applications	Ash-64180	Microcosm	
Interface Software	ASM, Link/Locate, Source Debugger	Uses Host system for applications	ASH8051	Microcosm	25
Interface Software	Source Debugger	Uses Host system for applications	Hyper/ICE-68000	Microcosm	
Interface Software	Link/Locate	Uses Host system for applications	MDE Series	Microcosm	
MS-DOS, Assembler		Digital Signal Processor Development System	DSP56000ADS	Motorola	
In host.		Operates as a remote hardware/software development station to a host such as EXORmacs, VME/10.	HDS200	Motorola	
In host.		Operates as a hardware/software development station.	HDS300	Motorola	
In host.		Operates as a remote hardware/software development station to a host such as EXORmacs, VME/10.	HDS400	Motorola	
Monitor, Debugger		Evaluation board for the MPU6805 microprocessor core. Provides design development tools for downloading programs from the host computer to user RAM.	MPU6805EVB	Motorola	
Monitor, Debugger, Assembler, Dissassembler			M68HC05EVM	Motorola	

Bold face indicates additional data is provided on the page noted.

IC MASTER

MPU DEVELOPMENT SYSTEMS (Cont'd)

Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk			Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)	Capacity (Kbytes)			
MC68000, 68010, 6800, 6809, 6802, 6805, 146805, 6801, 68120	2	2		256						Opt.	Opt.	Opt.
68020, 68010, 68008, 68000, 6801, 6809, 68HC11	8	6		2 MB		1	5.25	655	70 MB			
MC68HC11, MC6809, MC6801, MC6803, MC68000, MC68008, MC68010, MC68020, MC6804, MC6805, MC68120	3	opt.	opt.	384	16	1	5.25	655	40 MB	opt.	opt.	opt.
NS32008, NS32016, NS32032	2	2	1	128	128							
NS32008, NS32016	2	2	1	128	512							
NS32008, NS32016, NS32032, NS32132, NS32232	4	4	1	4 MB	8				40 MB			x
COP400 Series, NS455	1	3										Opt.
μPD70108, μPD70116 (V20/V30)		2	1	320	610	1	8	1 MB				
μPD70108, μPD70116 (V20/V30)		2	1	320	610	1	8	1 MB				
μPD70108, μPD70116 (V20/V30)	5	10	2	512	1 MB	2	8	1 MB	32 MB			
CDS-001D is a PCXT/AT card to evaluate and develop CA16C001 Applications	1	2 audio ports		2 MB	16 MB							
63P01M1, 6301V1, 6301X1, 6301Y0, 6303R, 6303X, 6303Y, 6305X2, 6305Y2, 6309, 6309E, 64180, 68P01, 6805U1, 6805V1, 68P05V07; 8031, 80C31, 8032, 80C32, 8035, 8039, 8040, 8044, 8048, 80C48, 8049, 8050, 8051, 80C51, 8052, 80C52, 8080, 8085, 80C85, 8086MAX, 8086MIN, 80C86MAX, 80C86MIN, 8088MAX, 8088MIN; 80C88MAX, 80C88MIN, 8096, 8096BH, 8097, 8097BH, 80C152JA, 80C152JB, 80186, 80C186, 80188, 80C188, 80C196, 80286, 80C321, 80C451, 80C452, 80C521, 80C535, 80C552, 8744, 8748, 8749, 87C51, 8752; NSC800, 87P50; V20MAX, V20MIN, V30MAX, V30MIN, V40, V40, V50, 78310; 80C51VS, 85C154VS; 6800, 6801, 6802, 6803, 68HC05C4, 68HC05C8, 6803U4, 6805E2, 6805E3, 6809, 6809E, 68HC11, 68HCC11F1, 68701, 68705R3, 68705U3, 68701U4, 68000, 68HC000, 68008; 1802, 1804, 1805, 1806; 6500/1, 6500/1EB, 6500/11, 6500/41, 6501Q, 6502, 65C02, 6510, 65/11EB, 6511Q, 6512, 65/41EB, 6541Q., Z180, Z80, Z80C, Z8601, Z8603, Z8611, Z86C11, Z8612, Z8613, Z8681, Z86C81, Z8682, Z8691, Z86C91, Z8800, Z8801, Z8820, Z8822, Z8001, Z8002, Z8003, Z8004;		1	32	128						x		
6500 family.	1	2		16		2					Opt.	x
IMST414												
Z80H, Z80C, Super-8, Z8, 8085/80C85, 8048/49/50/C48, 8052/C51/C154, 6800, 6801/03, 6809, 6809E, 6309E, 68HC11, 68HC05, 6301V/03R, 6301X/03X, 6301Y/03Y, 6305U/V, 6305X/Y, 6305Z, 7810/11H, 78C10/11/14, 7807/09, 78310/312, M50734SP, M50745, M50747, M37450, 6502/65C02, MB89700, 64180Z/R, 647180, Z180, 8086/88, 80C86/C88, 80186/188, V20/V30, V40/V50, 68000/10/12, 68020, 80C186/188, 80286, 80386, 80386SX, 80376, V25, V33, V60, H8/532, H16	1		1	64 320 128	8 MB							

Software Support		Comments	Model	Source	Line
Standard	Optional				
VERSAdos multitasking, real-time, multiuser, logical I/O file management; Pascal compiler; macro and linking assembler; page, screen and file-oriented editor, symbolic debugger.	FORTTRAN IV.	Optional real-time trace; ROM, RAM and disk autotest at power-on; board-level fault isolation.	M68000 (EXORmacs)	Motorola	5
UNIX System V, C, Pascal	MC68020 Source Level Debugger for C Compiler		SYS1131DVLP	Motorola	
VERSAdos real-time operating system.	UNIX System V/68 operating system, PASCAL, FORTRAN, 'C'		VME/10	Motorola	
TDS Firmware	EXEC	Development board for NS32008, NS32016, NS32032	DB32000	National	
TDS Firmware	MON16, EXEC, UNIX System V	Development board for NS32008, NS32016	DB32016	National	
UNIX System V	EXEC	Integrated Computer Module	ICM3216	National	10
In host CPU		Microcontroller On Line Emulator; consists of a host CPU, a MOLE Brain Board, and a MOLE Personality board.	MOLE	National	
	Assembler, C	In-Circuit emulator operational on DEC VAX, Intel Series III and IBM PC.	IE70108-5	NEC	
	Assembler, C	In-Circuit emulator operational on DEC VAX, Intel Series III and IBM PC.	IE70116-5	NEC	
MP/M-86	Assembler, C		MD086FD-10	NEC	
Interface driver hicom S/W & FFT S/W		Digital audio board to evaluate and develop audio compression capabilities using the CA16C001 digital audio commanding processor	CDS-001D	Newbridge (3593)	15
MS-DOS based PopUp menu interface with symbolic debug and high-level language support standard.		Integrated analyzer-emulator provides full-speed, real-time analysis. Includes 2.7 trace buffer, built-in EPROM Programmer extensive macro capabilities and Program Performance Analysis.	UniLab 8620	Orion	
Text editor, two-pass assembler, debugger/monitor in ROM.	PL/65 compiler.	Single step, real-time TRACE; software breakpoints; operational in-circuit emulator.	6500	Rockwell	
VAX-VMS		Cross-Software Package	IMSD600	SGS-Thomson	
Symbolic Debugger	Assembler, Microscope (Source Debugger)	Universal 8-bit to 32-bit in-circuit emulator.	SA98	Sophia	

Bold face indicates additional data is provided on the page noted.

IC MASTER

MPU DEVELOPMENT SYSTEMS (Cont'd)

Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk		Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)			
68000, 68008, 68010, 6809, 6809E, 6801; 8086/87, 8088/87, 80186, 80188, 8085A; Z80, Z80CMOS, Z8001/2; 1750A, F9450, NSC800	1	2		64-128	768				opt.	opt.	opt.
8086, 8085A, 8080A, 8048, 8049, 8035, 8039, 8021, 8041A, 8022, 6800, 68000, 6802, 6808, Z8000, Z80A	1	2		128					Opt.	Opt.	Opt.
8086, 8085A, 8080A, 8048, 8049, 8035, 8039, 8021, 8041A, 8022, 6800, 68000, 6802, 6808, F8, 3870, 3872, 3874, 3876, Z8001, Z8002, Z80A, TMS9900, SBP9900, 1802, 6500/1	1	2		128		2			Opt.	Opt.	Opt.
68000, 68008, 68010, 6809, 6809E, 6801; 8086/87, 8088/87, 80186, 80188, 8085A, 8051, 8048, 8021, 8041A, 8022; Z80, Z80CMOS, Z8001/2; 1750A, F9450, 9900/9989, 70108/V20, 70116/V30, 7809/08/07, 7810/11/16, 78C05/06	8	8		64-128	768	1	8	8	80 MB	opt.	opt.
TMS7xxx, TMS7xCxx		2								y	
TMS32010, TMS32010-14, TMS32010-25, TMS32011, TMS320C10, TMS320C10-25, TMS320C15, TMS320E15, TMS320C17, TMS320E17	1	3		8	8				x		
TMS32020, TMS320C25	1	3		136	144				x		
TMS34010	1	3		256	256				x		x
TMS370	1	2			640	2	5.25	360	20 MB	x	x
TMS320C30				532	1 MB						
TMS320, TMS7000					64						
TMS320, TMS7000					64						
TMS320C30											
TMPN 3150F, TMPN 3120F	Unlim					0		0			
TLCS-42	1	2	1	384		1	5.25		10 MB	x	x
TMP47C434N, TMP47C634N	2										
TLCS-47	1	2	1	384		1	5.25		10 MB	x	x
TLCS-48	1	2	1	384		1	5.25		10 MB	x	x
TLCS-Z80	1	2	1	384		1	5.25		10 MB	x	x
TMPZ84C00, Z80	1	2	1	64	64	2	8	1 MB		x	x
TMP84C011AF	1										
TMP84C013AF, TMP84C015AF	1										
TLCS-85	1	2	1	384		1	5.25		10MB	x	x
TMP90C840N, TMP90C841N	2										
80186, 80187, 80188, 80286, 80287, 80386, 80387, V40, V50, 68000, 68010, 68020, 68881, 68030, 68882, Z80, Z80H, 6301 X/Y/V, 6303 X/Y/V, 64280, 6801/3	1	2	1	64/256	2 MB				opt.		opt.
8086, 8087, 80186, 80187, 80188, 80286, 80287, 80386, 80387, V40, V50, 68000, 68010, 68020, 68881, 68030, 68882, Z80, Z80H, Z180, 6301V, 6301X/Y, 6303V, 6303X/Y, 6801, 6803, 64180R, 64180Z		2	1	64/256	2 MB		5.27/3.5	1.44 MB	40 MB	opt.	opt.
8048, 8085, 8086, 8087, 8088, 80186, 80188, V20, V30, V40, V50, 6809, 6809E, 68000, 68008, 68010, Z80, Z80B, Z80H	1	2		64/128	16 MB				opt.	x	opt.

Software Support		Comments	Model	Source	Line
Standard	Optional				
OS/40 ROM based operating system. Simulated I/O support.	Assemblers, C compilers, PASCAL compilers, structured analysis tools, language directed editors (C, PASCAL), C/PASCAL HLL debug, integration control system.	Complete host based development system. VAX/ULTRIX & VAX/VMS support.	V-Systems	Tektronix	5
OS/40 ROM-based operating system; communications firmware; simulated I/O support.	Assemblies/compiles performed on host.	Optional emulator processors and prototype control probes; system designed as a peripheral for a host system.	8540	Tektronix	
DOS/50 disk based operating system; line-oriented editor; macro assembler with English language diagnostics; linker supervision; communications S/W; simulated I/O support.	Optional emulator processors and prototype control probes; ROM-based powerup systems test; real-time trace.		8550	Tektronix	
TNIX (UNIX based) operating system, communication F/W, simulated I/O support.	Assemblers, C compilers, PASCAL compilers, structured analysis tools, language directed editors (C, PASCAL), C/PASCAL HLL debug, integration control system.	Complete stand-alone 11/23 or 11/73 UNIX-based development system	856140 Systems	Tektronix	
Stand-alone device			EVM7000	TI	
On-board assembler/RASSM	X-ASSM/Linker	Hardware breakpoint and trace, real-time in-circuit emulation. TMS320 first-generation XDS.	TMDS3262211	TI	10
On-board assembler/RASSM	X-ASSM/Linker	Hardware breakpoint and trace, real-time in-circuit emulation. TMS32 second-generation XDS.	TMDS3262221	TI	
User Interface (debugger)	Assembler, C Compiler	Use with TI, IBM or IBM-compatible PCs. May also be used stand-alone with a dumb terminal.	TMDS34699-10000	TI	
Assembler/Linker		IBM-PC Based	TMDS3762210	TI	
TMS320C30 Assembler/Linker, C Compiler User Interface S/W, SPOX DSP Operating System			XDS1000	TI	
Assembler, simulator, debug monitor, logic tracing with extended data/address probes.		Host independent. Utilizes host computer, requires external 5V supply.	XDS11	TI	15
Assembler, simulator, debug monitor, logic tracing with extended data/address probes.		Host independent. Utilizes host computer.	XDS22	TI	
TMS320C30 Assembler/Linker, User Interface S/W			XDS500	TI	
SWN23100		Uses PC For Data Storage	BMN20000	Toshiba	
CP/M or MS-DOS	Debugger, Assembler	RTE 42 system evaluates TLCS42 MCU	BM4212A	Toshiba	
			BM47C834	Toshiba (3729)	20
CP/M or MS-DOS	Debugger, Assembler, or Compiler	RTE 47 system evaluates TLCS-47 MCU	BM4721	Toshiba	
CP/M or MS-DOS	Debugger, Macro-Assembler	RTE 48 system evaluates TLCS-48 MCU	BM4821	Toshiba	
CP/M or MS-DOS	Debugger, Macro-Assembler	RTE 80 system evaluates TLCS-280 MPU	BM8021	Toshiba	
CP/M compatible operating system	Macroassembler, RTE software	RTE 80 real-time emulator. BM1020 is real-time controller	BM8022	Toshiba	
			BM8026/24	Toshiba	25
			BM8027/25	Toshiba	
CP/M or MS-DOS	Debugger, Macro-Assembler	RTE 85 system evaluates TLCS-85 MCU	BM8521	Toshiba (3735)	
			BM9021	Toshiba	
MS-DOS standard operating system interface, standard High-level debug and symbolic debug	C, PASCAL and ADA Compilers, source-level Debuggers, assemblers, linkers available	Computer (AT-class) controlled emulator with up to one-million breakpoints and performance analysis.	ERX-Series	ZAX	
MS-DOS or UNIX, standard operating system interface with high level debug and symbolic debug	Compilers, Source-level Debuggers, Assemblers, and other utility software available for a variety of languages	Computer (AT) plug-in, sun workstation Ethernet or stand alone emulation chassis, controlled emulator with up to one-million breakpoints, performance analysis and multi-triggered real-time trace buffer	ERX-Series	ZAX	25
MS-DOS, VMS, Ultrix, Unix, standard operating system interface	C, PASCAL, and ADA Compilers, source-level Debuggers, Assemblers, Linkers, Symbolic Debug available	CRT or Host Computer controlled emulator with 4 hardware and 8 software breakpoints, 8048 built-in standard PROM programmer.	ICD-Series	ZAX	

Bold face indicates additional data is provided on the page noted.

IC MASTER

MPU DEVELOPMENT SYSTEMS (Cont'd)

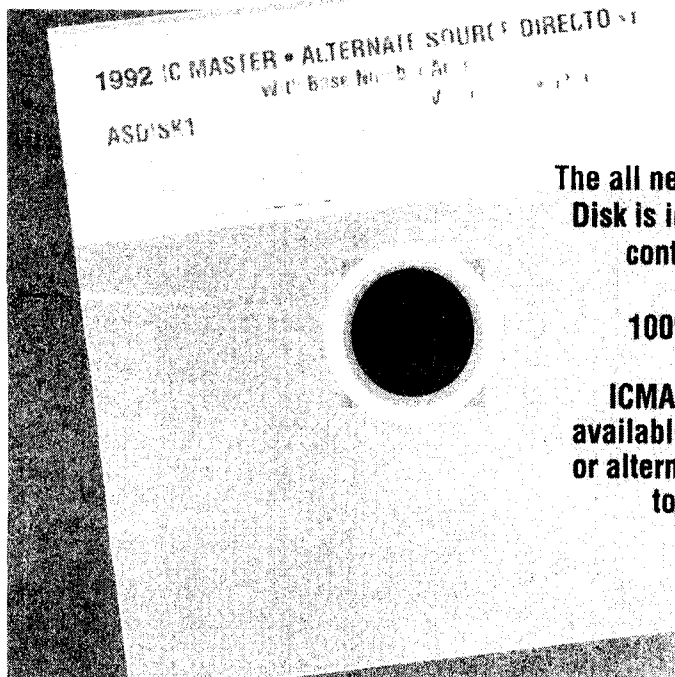
Supported CPUs	Maximum No. of Users Stations	Communication Ports		User RAM		Floppy Disk			Hard Disk	Logic Analyzer	PROM Programmer	Printer
		Serial	Parallel	Supplied (Kbytes)	Maximum Capacity (Kbytes)	No.	Size (in.)	Capacity (Kbytes)	Capacity (Kbytes)			
8048, 8085, 8086, 8087, 8088, 80186, 80188, V20, V30, V40, V50, 6809, 6809E, 68000, 68008, 68010, Z80, Z80B, Z80H	1	2		64/128	16 MB					opt.	x	opt.

Software Support		Comments	Model	Source	Line
Standard	Optional				
MS-DOS, UNIX, standard operating system interface with symbolic debugger	Compilers, source-level Debuggers, Assemblers, and other utility software available for a variety of languages	CRT or Host Computer controlled emulator with hardware and software breakpoints, triggered real-time trace buffer, 8048 built-in standard Prom programmer	ICD-Series ZAX	ZAX	

Bold face indicates additional data is provided on the page noted.

Hearst Engineering Software

ICMASD *Alternate Source Directory*



The all new 1992 ICMASD-IC Alternate Source Directory on Disk is identical to the Alternate Source Directory Section contained in Volume Two of the printed version of the 1992 IC Master. All you need is an IBM XT/AT or 100% compatible personal computer with hard drive.

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For delivery outside the USA, please add \$10 per ICMASD.

INTRODUCTION TO INTERFACE

In the Interface Section the selection parameters differ for each category; therefore each has its own format. Some of the products in this section, primarily analog to digital and digital to analog converters, may be hybrids; the hybrids listed are only those packaged to be compatible with ICs.

In addition to these circuits are devices used to interface to peripherals such as: display drivers, keyboard encoder-decoders, line circuits, and transmitter-receiver circuits.

Category

- Analog Switches**
- Switches with Drivers**
- Switches without Drivers**
- Multiplexers**
- Analog to Digital Converters**
- Binary Output**
- Decimal Output**
- Digital to Analog Converters**
- Display Drivers**
- Error Checking Circuits**
- Keyboard Encoders-Decoders**
- Line Circuits**
 - Drivers**
 - Receivers**
 - Transceivers**
- Memory Drivers**
- Peripheral Drivers**
- Sense Amplifiers**
- Transmitters-Receivers**

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	
Switches with Drivers								2xSPST CMOS								(Cont'd)
2xSPST	CMOS	70	± 15	± 15	DG200A	† Maxim		75		-5/8 ± 10 ± 11 ± 15	15,-3 ± 15.5 ± 15.5 ± 15	DG542A IH5141C DG200 IH5341 IH5041C IH5141C IH5341	† Siliconix Harris Harris Harris Harris Harris Harris			
4xSPST	CMOS	2.5K 4.0K 70 100	± 15 ± 15 ± 15 ± 15	± 15 ± 15 ± 15 ± 15	MAX326 MAX327 HI-201 DG308A DG309	† Maxim † Maxim † Maxim † Maxim † Maxim	5					± 15.5	HI5041-2 HI5041-5	† Harris Harris	75	
SPST	CMOS	25	± 15	± 15	DG400A DG417A DG418A	† Siliconix Siliconix Siliconix						± 60	MAX341C MAX341E MAX341M	Maxim Maxim † Maxim		
		50	± 11 ± 15	± 15.5 ± 15	IH5140M IH5040M IH5041M IH5140M IH5141M AC2214 AC2215	† Harris † Maxim † Maxim † Maxim † Maxim OEI OEI	10		80	± 14 ± 15	± 15 ± 15	DG200C ADG200B HI200-5	† Harris AD Harris		80	
		75	± 10 ± 11	± 15.5 ± 15.5	IH5140C HI5040-2 HI5040-5	Harris † Harris Harris			90	± 15	± 15	AD7592DIB AD7592DIK	AD AD	(3330) (3330)		
			± 15	± 15.5	IH5140C	† Maxim		JFET	6	-6 to 10	-18,15	CAG27	† TeledyneC		85	
			± 15	± 15.5	IH5140C	† Maxim			10	-6 to 10 -7.5 to 15	-18,15 ± 15.5	CAG27-10 DG180B DG180A	† TeledyneC † Harris † Siliconix			
		80	± 15	± 15	IH5040C	† Maxim				± 10	-18,12 -20,10,5	DG141A DG180A	† Siliconix † Harris		90	
GaAs	JFET	—	20 dBm	± 5	TQ9151	TriQuint			30	-6 to 10 -7.5 to 15	-18,15 ± 15.5	CAG24 DG181A DG181A	† TeledyneC † Harris † Siliconix			
		6	-5 to 10 -5 to 4	± 15 ± 15.5	CAG6 CAG10A	† TeledyneC † TeledyneC				± 10	-18,12 -20	DG133A CDA23	† Siliconix † TeledyneC		95	
		10	-5 to 10 -5 to 4	± 15 ± 15.5	CAG610 CAG10C	† TeledyneC † TeledyneC	25		50	-7.5 to 15 ± 10	± 15.5 -18,15	DG181B CAG13 CAG42 CAG45A	† Harris † TeledyneC † TeledyneC † TeledyneC			
		15	-10 to 5	± 15.5	CAG10D	† TeledyneC			75	-10 to 15	± 15.5	DG182A DG182A	† Harris † Siliconix		100	
		30	± 5	± 5.5	CAG10	† TeledyneC			100	-10 to 15 ± 10	± 15.5 ± 15.5	DG182B TL182C TL182I	† Harris TI TI			
		50	-10 to 4 -10 to 5	± 15.5 -15.5	CAG10B CAG14	† TeledyneC † TeledyneC	30	4xSPST	CMOS	25	± 15	± 15	DG202 DG411A DG412A DG413A	† Maxim † Siliconix † Siliconix † Siliconix		105
		60	± 10	-18,15 ± 18.5	CS4R101A CAG30	† TeledyneC † TeledyneC				0 to 10	-0.5 to 10.5	CD54HCT4066 CD54HC4066 CD74HCT4066	† Harris † Harris Harris		110	
		100	± 5	± 15	2107BE	† TeledyneC			30	0 to 12	2 to 12	TLC4016 TLC4066	TI TI			
PMOS		80-300 100-400	± 10 ± 10	-20,10 -20,10	TL610I TL610C	TI TI	35		50	± 15	± 15	HI201HS-2 HI201HS-5	† Harris † Harris		115	
2xSPST	CMOS	5	± 15	± 15	DG300A	† Harris			60	± 15	± 15	ADG221A ADG222A	AD AD	(3330) (3330)		
		25	± 15	± 15	IH401/A DG401A DG5048A	Harris † Siliconix † Siliconix	40		70	-5/8	15,-3	DG540A DG541A	† Siliconix † Siliconix		120	
			± 60	± 60	MAX348C MAX348E	Maxim Maxim			75	± 11	± 15.5	IH5052M IH5053M	† Harris † Harris			
		35	± 15	± 15	IH5048C IH5048M	Maxim † Maxim	55			± 15	± 15	IH5352	Maxim			
		50	± 11 ± 15	± 15.5 ± 15	IH5141M HI300 HI304 HI381	† Harris Harris Harris Harris	60		80	± 10	± 15.5	IH5052C IH5053C	Harris Harris		125	
					DG300AA DG300AB DG300AC DG304AA DG304AB DG304AC DG381AA DG381AB											

◊ Available in Surface Mount Package

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Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line
Switches with Drivers (Cont'd)							
4xSPST	CMOS	100	± 14 ± 15	± 15 ± 15	DG201C ADG201B ADG201C AD7510DIJ AD7510DIK AD7510DIS AD7511DIJ AD7511DIK AD7511DIS AD7511DIT DG308A DG309 HI201-5 DG308AA DG309A DG309C	Harris AD AD AD (3330) AD (3330) † AD (3330) AD AD † AD (3330) † AD (3330) † Harris † Harris ◊ Harris † Siliconix † Siliconix Siliconix	(Cont'd)
		± 22 0 to 15	± 22 -0.5 to 15		NJU201A SN54HC4016 SN54HC4066	◊ NJR (3595) ◊† TI ◊† TI	
175		± 15	± 15		ADG202A DG202 DG211 DG212 DG201C DG201M DG211C MAX331 MAX332 DG201AA DG202A DG211C DG212C	† AD (3330) † Harris Harris Harris Maxim † Maxim ◊ Maxim † Maxim † Maxim † Siliconix † Siliconix Siliconix Siliconix	
		± 20	± 20		NJU211	◊ NJR (3595)	
200		± 22 ± 15	± 22 ± 15		NJU7301 DG201A	◊ NJR (3595) † Harris	
280		± 7.5	± 7.5		GD4066B CD4066B CD4066BE CD74HC4066 CD4066A CD4066B MC14066BC MC54HC4066 MC74HC4066 CD4066BC CD4066BM MM54HC4066 MM74HC4066 BU4066B HCC4066B HCF4066B M74HC4066 HEF4066B HEF4066BD 74HCT4066 74HC4066 SN74HC4066 TC4066B TC74HC4066A	† GoldStar † Harris Harris Harris † Micrel † Micrel Motorola † Motorola Motorola National † National National ROHM † SGS-Thomson ◊ SGS-Thomson SGS-Thomson Signetics † Signetics Signetics Signetics TI Toshiba (3727) Toshiba	
400		± 7.5	± 7.5		MC14016BC BU4016B TC4016B	Motorola ROHM Toshiba (3727)	
850		± 7.5	± 7.5		GD4016B CD4016B CD4016BE CD74HC4016 CD74HC4316	† GoldStar † Harris Harris Harris Harris	
(Continued)							
4xSPST	CMOS	850	± 7.5	± 7.5	CD4016A CD4016B MC54HC4016 MC54HC4316 MC74HC4016 MC74HC4316 CD4016BC CD4016BM MM54HC4016 MM54HC4316 MM74HC4016 MM74HC4316 HCC4016B HCF4016B M74HC4316 HEF4016 HEF4016B 74HCT4316 74HC4016 74HC4316 TC74HC4016A TC74HC4316A	† Micrel † Micrel † Motorola † Motorola Motorola Motorola National † National † National National National † SGS-Thomson ◊ SGS-Thomson SGS-Thomson † Signetics † Signetics Signetics Signetics Signetics Toshiba Toshiba	(Cont'd)
	CMOS/DMOS	160	± 10	± 15	CDG308DY	◊ TeledyneC	
	FET	80	± 10	± 15	SW201B	† AD (3330)	
		150	± 10	± 15	SW201G	◊ AD (3330)	
	GaAs	4	2	-5.2	SW-400	◊† AD	
	J-FET	50	± 10	± 10	SD5000 SD5001 SD5002 SD5400 SD5401 SD5402	Siliconix Siliconix Siliconix Siliconix Siliconix Siliconix	
		150	10	15	SW202G	AD (3330)	
	JFET	50	-10 to 5 ± 10	-15.5 ± 18,-7	CAG49 CAG50	† TeledyneC † TeledyneC	
		60	± 10	-18.5	CAG49	† TeledyneC	
		75	± 10	± 15	SW7510A SW7510B SW7510E SW7510F SW7511A SW7511B SW7511E SW7511F	† AD (3330) ◊† AD (3330) AD (3330) AD (3330) † AD (3330) † AD AD (3330) AD (3330)	
	MOS	95	16	3 to 16	TSC4201C TSC4201M TSC4202C TSC4202M TSC4203C TSC4203M TSC441C TSC441M TSC442C TSC442M TSC443C TSC443M TSC445C TSC445M TSC446C TSC446M TSC447C TSC447M	TeledyneC † TeledyneC TeledyneC † TeledyneC TeledyneC † TeledyneC TeledyneC † TeledyneC TeledyneC † TeledyneC TeledyneC † TeledyneC TeledyneC † TeledyneC † TeledyneC † TeledyneC † TeledyneC	
4xSPST, Break-Before-Make		50	± 15	± 15	MAX334C MAX334E MAX334M	◊ Maxim ◊ Maxim † Maxim	
4xSPST Common Output		PMOS	150-450 200-600	± 10 ± 10	-20,10.5 -20,10.5	DG172A DG172C	† Siliconix Siliconix

503

INTERFACE—Analog Switches/Multiplexers (Cont'd)

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	
Switches with Drivers (Cont'd)								SPDT¹ JFET (Cont'd)								
4xSPST Var. Comb. of Normally On/Off, with Disable																
FET	80	± 10	± 15		SW06B	$\diamond \dagger$ AD (3330)		30		-7.5 to 15	± 15.5		DG187A	$\diamond \dagger$ Harris	65	
	100	± 10	± 15		SW06F	AD			50	-7.5 to 15	± 15.5		DG187B	\diamond Harris		
	150	± 10	± 15		SW06G	AD				± 8	± 15		2126BG	\dagger TeledyneC		
4xSPST Various Combinations of Normally On/Off																
FET	80 *	± 10	± 15		SW201B	\dagger AD (3330)		75		-10 to 15	± 15.5		DG188A	$\diamond \dagger$ Harris	70	
	85	± 10	± 15		SW01B	\dagger AD			100	-10 to 15	± 15.5		DG188A	\dagger Siliconix		
					SW01F	AD				± 10	± 15.5		DG188B	\diamond Harris		
					SW02F	AD							TL188C	TI		
JFET	200	± 10	± 15.0		LF11201	\dagger National			PMOS	100-400	± 10	-20,10	TL604I	TI	75	
					LF11202	\dagger National				200-600	± 10	-20,10	TL604C	TI		
					LF11331	\dagger National		10	2xSPDT	CMOS	25	± 14	± 15	IH5151	Harris	
					LF11332	\dagger National					± 15	± 15	DG403A	\dagger Siliconix		
					LF11333	\dagger National							DG5051A	\dagger Siliconix		
	250	± 10	± 15.0		LF13201	National				35	± 15	± 15	IH5051C	Maxim	80	
					LF13202	National							IH5051M	\dagger Maxim		
					LF13331	National		15					DG421A	\dagger Siliconix		
					LF13332	National							DG423A	\dagger Siliconix		
					LF13333	National							DG425A	\dagger Siliconix		
PMOS	200-600	± 10	-20,10,5		AH0015C	National				40	± 15	± 15	IH5352	Harris	85	
2xSPDT	CMOS	50	± 15	± 15	HI-301	\dagger Harris				75	± 15	± 15	HS303RH	\dagger Harris		
					HI-303	\dagger Harris		20					HS307RH	\dagger Harris		
SPDT	CMOS	25	± 15	± 15	DG402A	\dagger Siliconix					± 60	± 60	HS390RH	\dagger Harris		
					DG419A	Siliconix							MAX343C	Maxim	90	
					DG5050A	\dagger Siliconix							MAX343E	Maxim		
	35	± 15	± 15		IH5050C	Maxim							MAX343M	\dagger Maxim		
					IH5050M	\dagger Maxim		25	2xSPDT Audio	CMOS	20	9	4.5-10	TK15120M	Toko	
JFET	50	-10 to 5	-15.5		CDA18	\dagger TeledyneC					12	1.8-15	TK15022Z	Toko		
PMOS	100-400	± 10	-20,10		TL601I	TI						3-20	TK15021Z	Toko		
					TL607I	TI										
	200-600	± 10	-20,10		TL601C	TI										
					TL607C	TI		30	2xSPDT Video	CMOS	20	9	5-10	TK15064Z	Toko	
SPDT for D/A NPN-PNP								2xSPDT ¹								
	10	± 10	-15.5		CDA23	\dagger TeledyneC			CMOS	50	± 11	± 15.5	IH5143M	\dagger Harris	95	
			± 15		CDA6	\dagger TeledyneC					± 15	± 15	HI307	Harris		
	0 to -10	-15			CDA13	\dagger TeledyneC							DG303AA	\dagger Maxim		
	10	10			CDA4A	\dagger TeledyneC							DG303AB	Maxim	100	
SPDT Video	CMOS	20	9	4-7	TK15065Z	Toko							DG303AC	Maxim		
					TK15066Z	Toko							DG307AA	\dagger Maxim		
					TK15067Z	Toko							DG307AB	Maxim		
SPDT ¹	CMOS	50	± 11	± 15.5	IH5142M	\dagger Harris							DG307AC	Maxim		
			± 15	± 15	HI305	Harris							DG390AA	\dagger Maxim	105	
					HI387	Harris							DG390AB	Maxim		
					DG301AA	\dagger Maxim							DG390AC	Maxim		
					DG301AB	Maxim							IH5143M	$\diamond \dagger$ Maxim		
					DG301AC	Maxim							DG303AA	\dagger Siliconix		
					DG305AA	\dagger Maxim							DG307AA	\dagger Siliconix		
					DG305AB	Maxim							DG390AA	\dagger Siliconix		
					DG305AC	Maxim							HI5051-2	\dagger Harris	110	
					DG387AA	\dagger Maxim							HI5051-5	Harris		
					DG387AB	Maxim							DG243A	\dagger Siliconix		
					DG387AC	Maxim							DG5043A	\dagger Siliconix		
					IH5142M	$\diamond \dagger$ Maxim										
					DG301AA	\dagger Siliconix										
					DG305AA	\dagger Siliconix										
					DG387AA	\dagger Siliconix										
					± 15.5	HI5050-2	\dagger Harris									
						HI5050-5	Harris									
	75	± 10	± 15.5		IH5142C	Harris										
		± 15	± 15		IH5042M	$\diamond \dagger$ Maxim										
					IH5142C	\diamond Maxim										
					± 15.5	HI5042-2	\dagger Harris									
						HI5042-5	Harris									
	80	± 15	± 15		IH5042C	\diamond Maxim										
JFET	10	-7.5 to 15	± 15.5		DG186A	$\diamond \dagger$ Harris										
					DG186B	\diamond Harris										
					DG186A	\dagger Siliconix										
(Continued)								(Continued)								

INTERFACE—Analog Switches/Multiplexers (Cont'd)

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	
Switches with Drivers (Cont'd)								(Cont'd)								
2xSPDT ¹	JFET	75	-10 to 15	± 15,5	DG191A DG191A	◊† Harris † Siliconix	5	2xDPST	CMOS	50	± 15	± 15	DG384AA DG384AB DG384AC IH5145M DG302AA DG306AA	† Maxim Maxim Maxim ◊† Maxim † Siliconix † Siliconix	65	
		100	-10 to 15	± 15,5	DG191B TL191C	◊ Harris TI										70
		150	± 10	± 15,5	TL191I	TI						± 15,5	HI5049-2 HI5049-5	† Harris Harris		
3xSPDT	CMOS	280	± 7.5	± 7.5	GD4053B CD4053B CD4053BE CD54HCT4053	† GoldStar † Harris Harris † Harris				75	± 10 ± 15	± 15,5 ± 15	IH5145C IH5045M IH5145C	Harris ◊† Maxim ◊ Maxim	75	
					CD54HC4053 CD74HCT4053 CD74HC4053 CD74HC4353 CD4053A CD4053B MC14053BC MC54HC4053	† Harris † Harris Harris Harris † Micrel † Micrel Motorola † Motorola						± 15,5	HI5045-2 HI5045-5	◊† Harris ◊ Harris		
					MC74HC4053 MC74HC4353 CD4053BC CD4053BM HCC4053B HCF4053B M74HC4053 M74HC4353 HEF4053B HEF4053BD 74HCT4353 74HC4353 TC4053B TC74HC4353A	Motorola Motorola National † National † SGS-Thomson ◊ SGS-Thomson SGS-Thomson SGS-Thomson Signetics † Signetics Signetics Signetics † Toshiba (3727) Toshiba					± 60	MAX345C MAX345E MAX345M	Maxim Maxim † Maxim	80		
4xSPDT	CMOS	—	—	8	MC14551BC MAX333C MAX333E MAX333M	Motorola ◊ Maxim ◊ Maxim † Maxim	20	CMOS-RH	75	± 15	± 15	HS302RH HS306RH HS384RH	† Harris † Harris † Harris			
	PNP	7	0 to -10	-15	CDA11-S12 CDA11	TeledyneC TeledyneC			JFET	10	-7.5 to 15	± 15,5	DG183A DG183B DG183A	◊† Harris ◊ Harris † Siliconix	85	
		10	0 to -10	-15							± 10	-18,12	DG140A	† Siliconix		
										30	-7.5 to 15	± 15,5	DG184A DG184A	◊† Harris † Siliconix	90	
											± 10	-18,12	DG129A	† Siliconix		
4xSPDT ¹	PNP	10	± 10	± 15	CDA29A	† TeledyneC	40		50	-7.5 to 15	± 15,5	DG184B	◊ Harris			
2xDPST	CMOS	50	± 15	± 15	HI-302	† Harris				75	-10 to 15	± 15,5	DG185A DG185A	◊† Harris † Siliconix		
DPST	CMOS	50	± 15	± 15	DG384AA IH5144C IH5144M	† Siliconix Harris † Harris				100	-10 to 15	± 15,5	DG185B CAG48A	◊ Harris † TeledyneC	95	
		75	± 11	± 15,5						150	± 10	± 15,5	TL185C TL185I	TI TI		
			± 15	± 15	IH5044M IH5144C IH5144M	◊† Maxim ◊ Maxim ◊† Maxim										
				± 15,5	HI5044-2 HI5044-5	† Harris Harris										
		80	± 15	± 15	IH5044C	◊ Maxim	45	8-Channel	DMOS	30	-110 to 90	± 110	USH5008	Universal (3737)		
	JFET	6	-5 to 10	± 15	CAG7	† TeledyneC			2xSP3T Audio	CMOS	20	12	1.8-16	TK15023Z	Toko	
		10	-5 to 10	± 15	CAG710	† TeledyneC			2x4PDT Audio	CMOS	20	9	1.8-16	TK15080D	Toko	
									2x4PST Audio	CMOS	20	9	1.8-16	TK1508D	Toko	110
									4 Channel Video	CMOS	800	± 3V	12V	CA3256	Harris	
2xDPST	CMOS	25	± 15	± 15	DG405A DG5049A	† Siliconix † Siliconix	50	4PDT for D/A	PNP	10	± 10	± 15,5	CDA28A	† TeledyneC		
		35	± 15	± 15	IH5049C IH5049M	Maxim † Maxim			4PST	CMOS	50	± 15	± 15,5	HI5047A-2 HI5047A-5	† Harris Harris	
		50	± 11 ± 15	± 15,5 ± 15	IH5145M HI306 HI384	† Harris Harris Harris					75	± 15	± 15,5	HI5047-2 HI5047-5	† Harris Harris	115
					DG302AA DG302AB DG302AC DG306AA DG306AB DG306AC	† Maxim Maxim Maxim † Maxim Maxim Maxim			8xSPST	CMOS	100	-60 to 50	± 60	DG566A	† Siliconix	
									Switches without Drivers							
								SPST	JFET	100	± 0.2		IH5021C IH5021M	† Harris † Harris	(Continued)	
(Continued)								(Continued)								

DT¹ means four terminals with a pair of normally open and normally closed contacts.

INTERFACE—Analog Switches/Multiplexers (Cont'd)

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line
Switches without Drivers (Cont'd)								8-Channel High-Voltage HVCMOS							
SPST	JFET	150	± 0.2		IH5022C	Harris	5	22	± 10	140		HV2114 HV2214	Supertex Supertex	55	
					IH5022M	† Harris				160		HV2116 HV2216	Supertex Supertex		
					IH5024C	Harris									
					IH5024M	† Harris									
2xSPST	CMOS	55	± 50	± 20	HV348	Supertex	10	40	± 15	140		HV1214 HV1414 HV1614 HV1814	Supertex Supertex Supertex Supertex	60	
		100	± 50	± 20	HV341	Supertex									
	JFET	100	± 0.2		IH5017C	Harris				160		HV1216 HV1416 HV1616 HV1816	Supertex Supertex Supertex Supertex		
		150	-15 to 30 ± 0.2	30	AH5020C	National									
					IH5020C	Harris	15							65	
					IH5020M	† Harris									
2xSPST Common Output	JFET	100	± 0.2		IH5019C	Harris									
					IH5019M	† Harris									
		150	± 0.2		IH5018C	Harris	20							70	
					IH5018M	† Harris									
3xSPST	JFET	150	± 0.2		IH5016C	Harris									
					IH5016M	† Harris									
3xSPST Common Output	JFET	150	± 0.2		IH5014C	Harris	25							75	
					IH5014M	† Harris									
4xSPST	BIFET	110	24	± 15	MB47201	◊ Fujitsu									
	CMOS	30	± 15	44	ADG201HS	◊ † AD (3330)									
		115	± 15	44	ADG211A	† AD (3330)	30							80	
					ADG212A	† AD (3330)									
	JFET	100	± 0.2		IH5011C	Harris									
					IH5011M	† Harris									
					AH5011C	National	35							85	
		150	± 0.2		IH5012C	Harris									
					IH5012M	† Harris									
					AH5012C	National									
4xSPST Common Output	JFET	100	± 0.2		IH5009C	Harris	40							90	
					IH5009M	† Harris									
					AH5009C	National									
		150	± 0.2		IH5010C	Harris									
					IH5010M	† Harris	45							95	
					AH5010C	National									
2xSPDT	CMOS	95	± 7.5	± 7.5	TSC444	◊ † TeledyneC									
		100	± 50	± 20	HV343	Supertex									
2xDPST	CMOS	100	± 50	± 20	HV345	Supertex	50							100	
Dual Audio Switch	Fet	85	14.2	22	SSM-2402	◊ AD									
					SSM-2412	◊ AD									
Dual 4-Channel with Decode	HVCMOS	40	± 15	140	HV1314	Supertex									
				160	HV1316	Supertex	55							105	
Quad Analog Switch					HC2003	Hughes									
Eight Outputs Solid-State DIP Switch					HC2001	Hughes									
1-of-8 Decode 8-Channel	HVCMOS	40	± 15	140	HV1514	Supertex									
				160	HV1516	Supertex	60							110	
4-Channel High Voltage	HVCMOS														
		4-Channel High-Voltage	± 15	160	HV1716	Supertex									
4-Channel High-Voltage	HVCMOS	25	± 15	140	HV1014	Supertex	65							115	
					HV1714	Supertex									
					HV1016	Supertex									
4x1 Video Crosspoint Switch	JFET	960k	-2 to 4	± 8	GX414A	◊ Gennum (3497)									

Multiplexers															
Audio Signals, Dual 2-Mode													M51551	Mitsubishi	70
Audio/Video Switch													GL3812	GoldStar	
CMOS Analog Multiplexer, 4-Channel Differential															
CMOS 1500 ± 15 ± 15													HI1-0509A-2	† Burr-Brown	
CMOS Analog Multiplexer, 8-Channel Differential															75
CMOS 1500 ± 15 ± 15													HI1-0507A-2	† Burr-Brown (3419)	
CMOS Analog Multiplexer, 8-Channel Single-Ended															
CMOS 1500 ± 15 ± 15													HI1-0508A-2	† Burr-Brown (3419)	
CMOS Analog Multiplexer, 16-Channel Differential															80
CMOS 1500 ± 15 ± 15													HI1-0506A-2	† Burr-Brown (3419)	
Crosspoint Switch, 8x12													GM62093	GoldStar	
Crosspoint Switches															
													CD22100	Harris	85
													CD22101	Harris	
													CD22102	Harris	
													CD74HCT22106E	Harris	
													CD74HC22106E	Harris	90
													MC142100	Motorola	
													RC4444	Raytheon	
													RM4444	† Raytheon	
Data Selector, 8-Channel													HC2004	Hughes	95
High Current Switch (to drive power transistor switches)													SG3629	◊ SiliconG	
3xSPDT CMOS 280 ± 7.5 ± 7.5													BU4053B	ROHM	
Dual 4-Channel CMOS													TC74HC4352A	Toshiba	
Dual 4-Channel Analog Multiplexer															100
HC													M74HC4052	SGS-Thomson	
Triple 2-Channel CMOS															
50 ± 15 5													TC74HC5353A	Toshiba	
													MM54HC4053	† National	105
													MM74HC4053	National	
Triple 2-Channel Analog Multiplexer															
HC													M74HC4053	SGS-Thomson	
Four Channel, Single-Ended													MX850	Datel (3442)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line
Multiplexers (Cont'd)								8 Channel Differential CMOS (Cont'd)							
8 Channel	CMOS	280	± 7.5	± 7.5	MC54HC4351	↑ Motorola	5	280	± 7.5	± 7.5			CD4097B	↑ Harris	65
					MC74HC4051	Motorola							CD4097BE	Harris	
					MC74HC4351	Motorola		400	± 15	± 15			HCC4097B	↑ SGS-Thomson	
					MM54HC4051								HCF4097B	SGS-Thomson	
					MM74HC4051	↑ National									
					HCC4051B	↑ SGS-Thomson	10						AD7507S	↑ AD	70
					HCF4051B	↑ SGS-Thomson							AD7507T	↑ AD	
					M74HC4351	SGS-Thomson							HI507-2	↑ Harris	
					HEF4051B	Signetics		450	± 15	± 15			HI507-5	↑ Harris	
					HEF4051BD	Signetics							HI507-8	↑ Harris	
					HEF4052B	Signetics	15						DG507AA	↑ Siliconix	75
					HEF4052BD	Signetics							DG528A	↑ Siliconix	
					74HCT4351	Signetics		450	± 15	± 15			AD7507J	↑ AD	
					74HC4351	Signetics							AD7507K	↑ AD	
					TC4051B	Toshiba		600	± 10	± 15			HI518-2	↑ Harris	
							20						HI518-5	↑ Harris	80
300	± 15	± 15			ADG508A	AD		750	± 15	± 15			MPC800K	Burr-Brown	
					ADG528A	AD		1300	± 15	± 15			MPC80D	Burr-Brown	
					AD7501J	↑ AD		1500	± 15	± 15			MXD807	Datel	
					AD7501K	↑ AD							HI507A-2	↑ Harris	
					AD7501S	↑ AD	25						HI547-2	↑ Harris	85
					AD7503J	↑ AD							HI507A-5	↑ Harris	
					AD7503K	↑ AD							HI507A-8	↑ Harris	
					AD7503S	↑ AD							HI547-5	Harris	
					HI508-2	↑ Harris		1800	± 15	± 15			MAX379C	↑ Maxim	
					HI508-5	↑ Harris	30						MAX379M	↑ Maxim	90
					HS508ARH	↑ Harris									
					IH6108M	↑ Harris									
					IH6108M	↑ Maxim									
350	± 15	± 15			IH6108C	Harris	35	JFET	300	-15 to 11	± 15		MUX28E	AD	95
					IH6108C	Maxim		450	-15 to 11.5	± 15			MUX28F	AD	
													IH5216	Harris	
								1000	± 25	± 15					
400	± 15	± 15			DG508AA	↑ Maxim	40	8 Channel							

♦ Available in Surface Mount Package

INTERFACE—Analog Switches/Multiplexers (Cont'd)

Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line	Function	Switch Type	ON Resistance 25°C, Ω	Analog Signal Range V	Supply Voltage, V	Device	Source	Line
Multiplexers (Cont'd)															
16 Channel		1800	± 15	± 15	H13-0506A-5	Burr-Brown (3419)		16-Channel/Dual 8-Channel Latchable CMOS		400	± 15	± 15	DG526	† Harris	
	CMOS	—	± 15	± 15	TC5023B	Toshiba (3727)		2-Channel, Triple CMOS		200	± 20	± 20	NJU4053B	◊ NJR	60
		250	± 15	± 15	MC14067BC	Motorola		2x1 Fast Toggle Bipolar			-2.5 to 3.5	± 5	GY4102	◊ Gennum	
		270	± 15	± 15	MV1606	Datel (3442)		4 Channel Video Bip		500	± 10	± 15	HA2444	◊† Harris	
		280	± 7.5	± 7.5	CD4067B	† Harris	5	4-Channel CMOS		220	± 20	± 20	NJU4052B	◊ NJR	
					CD4067BE	Harris				300	± 20	± 20	NJU4066B	◊ NJR	
					CD54HCT4067	† Harris		4x1 HDTV Video Bipolar			-2.4 to 3	± 4.5	GX4404	◊ Gennum (3497)	65
					CD54HC4067	† Harris	10					± 5	GX4414	◊ Gennum	
					CD74HC4067	Harris					-2.4 TO 3	± 5	GX4304	◊ Gennum	
					HCC4067B	† SGS-Thomson					-2.4 TO 3	± 5	GX4314	◊ Gennum (3497)	70
					HCF4067B	SGS-Thomson	15					± 5	GX4324	◊ Gennum	
					HEF4067B	Signetics							GX4334	◊ Gennum	
					HEF4067BD	† Signetics		4x1 Video Bipolar			-1.2 to 5	± 7 , ± 12	GX214	◊ Gennum	
					74HCT4067	Signetics									
					74HC4067	Signetics		8 Channel, High Voltage Bi-Directional CMOS/DMOS		25	200	220	ECI21HV	◊† ECI Semi	
										40	400	450	ECI41HV	◊† ECI Semi	
					ADG506A	AD (3331)		8-Channel CMOS		200	± 20	± 20	NJU4051B	◊ NJR	75
					ADG526A	AD (3331)				300	± 15	± 15	NJU7304	◊ NJR (3595)	
		400	± 15	± 15	AD7506S	◊† AD (3331)	20						DG508A	† Harris	
					AD7506T	◊† AD		8-Channel/Dual 4-Channel Analog Multiplexer CMOS		400	± 15	± 15	DG509A	† Harris	
					HI506-2	◊† Harris		8-Channel/Dual 4-Channel Latchable CMOS		400	± 15	± 15	DG528	† Harris	
					HI506-5	◊ Harris		8-Channel/Dual 4-Channel Latchable Multiplexer CMOS		400	± 15	± 15	DG529	† Harris	
					HI506/883	◊† Harris	25								
					DG506A	Siliconix (3682)									
		450	± 15	± 15	AD7506J	◊ AD (3331)									
					AD7506K	◊ AD (3331)									
		600	± 10	± 15	HI516-2	† Harris	30								
					HI516-5	Harris									
		750	± 15	± 15	MX1616C	Datel (3442)									
		1500	± 15	± 15	MX1606	Datel (3442)									
					HI506A-2	◊† Harris									
					HI546-2	† Harris	35								
		1800	± 15	± 15	HI506A-5	◊ Harris									
					HI506A-8	◊† Harris									
					HI546-5	Harris									
		5000	± 5 to 15	± 15.5	HS1840RH	† Harris	40								
	JFET	300	-15 to 11	± 15	MUX16A	† AD (3331)									
					MUX16E	AD (3331)									
		450	-15 to 11.5	± 15	MUX16B	† AD (3331)									
					MUX16F	AD (3331)									
		1000	± 25	± 15	IH5116	Harris	45								
16 Channel Single-Ended					MN7216	MicroNet									
16-Channel		400	± 15	± 15	MX7506S	† Maxim									
					MX7506T	† Maxim									
		450	± 15	± 15	MX7506J	◊ Maxim									
					MX7506K	◊ Maxim									
	CMOS	400	± 15	± 15	DG506AA	† Maxim									
					IH6116M	† Maxim									
		450	± 15	± 15	DG506AB	Maxim	50								
					DG506AC	◊ Maxim									
					IH6116C	Maxim									
16-Channel SE/8-Channel Differential CMOS		750	± 15	± 15	HI516-8	Harris									
16-Channel Wideband Video CMOS		90	± 10	16.5	DG535A	† Siliconix (3682)									
16-Channel with Enable CMOS		90	0 to 10	0 to 15	DG536	† Siliconix (3682)	55								
16-Channel/ Dual 8-Channel E D Latchable Multiplexer CMOS		400	± 15	± 15	DG527	† Harris									
16-Channel/Dual 8 Channel Analog Multiplexer CMOS		400	± 15	± 15	DG506A	† Harris									
					DG507A	† Harris									

DT¹ means four terminals with a pair of normally open and normally closed contacts.

INTERFACE—Analog to Digital Converters

Bits Res.	Linear-ity Error ± LSB	Conversion Time µS	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line		
Binary Output																				
3 1/2		800												x		KS7126C	Samsung			
4	1/8	0.005	700	x										x		AD9688B	◊ AD	5		
				x								x		AD9688T	◊† AD					
	1/2	0.03 *	800	x		x							x		UAB1005	SGS-Thomson				
				x		x						x		UAC1005	† SGS-Thomson					
4 (flash)	1/4		30	x												CA3304	Harris	10		
			35	x											CA3304A	Harris				
		25	x				x						x		TDC1044	TRWLSI				
4 (Video A/D Converter)	1/4	0.1	240	x				x						x		HA19202	Hitachi	15		
				x				x					x		HA19203	◊ Hitachi				
4 1/2			30						x			x				TSC835	◊ TeledyneC			
5 1/2	3	67ms	725									x		x	x	HI3-7159-5	Harris			
6	—	0.13		x										x		AD9000J	AD (3319)	20		
		75 MHz		x										x		AD9000S	† AD (3319)			
		1/4		x										x		µPC661	◊ NEC			
		0.02	450	x	x						x			x		SDA6020	Siemens			
		0.05	390	x											x		HA19216	◊ Hitachi	25	
		3.3	450	x											x		MN5900	MicroNet		
		1/2		x											x		µPD6951C/G	◊ NEC		
		0.002		x												AD9016	AD (3319)			
		0.003	1700	x					x						x		SDA8200	Siemens	30	
		0.02		x	x										x		MN5903	† MicroNet		
		0.04	200	x							x				x		MP7686K	◊ MicroPwr		
		0.05	60	x		x	x	x							x		CXD1172A	◊ Sony		
		0.07	80	x	x			x	x						x		LC89066	Sanyo	35	
		700		x	x										x		ZN440CJ	GEC Plessey		
		0.10	55 *	x											x		CA3306C	Harris		
		700		x	x										x		ZN441CJ	GEC Plessey		
		0.66	150		x											x		MP7682XB	MicroPwr	40
				x												x		MP7682XK	MicroPwr	
				x												x		MP7682XT	† MicroPwr	
				x												x		NE5036	Signetics	
	1	90	120	x												x		KAD0206	◊ Samsung	45
		100	15	x							x		x	x			NE5037	Signetics		
		100		x											x		MP7686J	◊ MicroPwr		
		0.04	200	x							x				x		MP7686A	◊ MicroPwr		
		0.166	20	x							x				x		MP7682XA	MicroPwr	50	
		0.66	150		x										x		MP7682XJ	MicroPwr		
				x											x		MP7682XS	† MicroPwr		
				x											x		MB40576	Fujitsu		
100				270											x					
6 (A/D - D/A combination)																				
1		0.05	300	x									x	x		MB40176	◊ Fujitsu			
6 (flash)																				
	1/2		70	x													CA3306	Harris	45	
		0.01	—	x	x		x							x		TDC1029	TRWLSI			
			1600	x	x		x								x		TDC1029	† TRWLSI		
6 (video)																				
	1/2	0.002		x													AD9006	AD (3319)		
6 (video digital converter)																				
	1/4	0.05	1000	x	x		x								x		TDC1046	TRWLSI		
7	1/2		30	x										x	x		USC1072	◊† Universal	50	
			100	x										x	x		USC1073	◊† Universal		
			150	x											x	x		USC1071		† Universal

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Conversion Time ± ½LSB μs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
7	1/2	0.03	385	x												ADC207C	Datel	(Cont'd)
				x												ADC207M	Datel (3440)	
		0.04		x			x	x				x				MC10321	Motorola	
		0.045	400	x				x			x			x		PNA7509	Signetics	
		0.05	300	x				x						x		HA19213	Hitachi	5
			385	x										x		ADC207/8838	Datel (3440)	
7 (flash)	1/2		150	x									x	x		USC1070	Universal	
		0.05	1000	x				x						x		TDC1047	TRWLSI	
		0.06		x				x								TDC1147	TRWLSI	
8																TDC1035	TRWLSI	10
	1/4	0.0067	2200	x	x	x	x	x	x			x		x		HADC77200	Signal Proc	
		9	125 *	x	x								x	x		ZN447E	GEC Plessey	
		15		x									x	x		AD670B	AD (3322)	
				x									x	x		AD670K	AD (3322)	
		110	15	x										x		ADC0801	National	15
				x										x		ADC0801C	National	
	1/2			x										x		μPC659	NEC	
		—	15 *							x						MC14443	Motorola	
		0.004	5000		x						x			x		4196	TeledyneC	
		0.005		x												AD770	AD (3319)	20
		0.006	1400 *	x										x		SCA5008	STC	
		0.0067	2200	x	x	x	x	x	x			x		x		HADC77100	Signal Proc	
		0.008	1300	x				x						x		SDA8010	Siemens	
		0.01	300	x		x							x	x		TDA8703	Signetics (3630)	
				x		x							x	x		TDA8703T	Signetics (3630)	25
		1100		x		x		x						x		CX20116	Sony	
		1500			x								x	x		AD9003K	AD	
		0.013	1000	x												AD9012	AD (3319)	
		0.033	500 *	x		x		x						x		IDT75C48	IDT	30
				x										x		IDT75C58	IDT	
		0.04	1250	x												ADC228C	Datel (3440)	
		0.05	90	x		x	x	x						x		CXD1175A	Sony	
			200													LC89086	Sanyo	
			300	x							x				x	MP7690K	MicroPwr	
			320	x	x	x	x							x		ADC304	Datel (3440)	35
			400	x				x						x		HA19209	Hitachi	
				x				x						x		HA19210	Hitachi	
				x				x						x		HA19211	Hitachi	
				x										x		HA19212	Hitachi	
		400 *			x	x	x	x	x	x	x	x	x		x	IR3K06	Sharp	40
		600		x										x		ADC208MC	Datel (3440)	
				x										x		ADC208MM	Datel (3440)	
		0.05 *	910 *		x		x	x	x	x	x	x	x		x	IR3K03A	Sharp	
		0.05	1200	x							x		x	x		KSV3208	Samsung	
			4075	x	x	x	x	x					x	x		ADC8304E	Datel	45
		0.06 *	1000 *		x		x	x	x	x	x	x	x		x	IR3K04A	Sharp	
		0.066	350	x							x			x		MP7684AK	MicroPwr	
				x							x			x		MP7684AT	MicroPwr	
				x							x			x		MP7690AB	MicroPwr	
				x							x			x		MP7690AT	MicroPwr	50
		0.07	300	x				x			x			x		HD49303	Hitachi	
				x										x		MP7684	MicroPwr	

INTERFACE

Bin.—Binary Compl.—Complementary CTC—Compl. 2's Compl. Mux. In.—Multiplexed Inputs Par. Out.—Parallel Output
Off.—Offset Magn.—Magnitude Int. Ref.—Internal Reference S&H—Sample and Hold Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
8	1/2	0.1	1000	x		x							x	x		SP1070	† Sipex-HSD	5
			1800	x				x					x	x		HS1068	† Sipex-HSD	
		0.10	300	x										x		MP7684K	MicroPwr	
				x										x		MP7684T	† MicroPwr	
		0.2	75	x										x		MP7683XB	MicroPwr	
				x										x		MP7683XK	MicroPwr	10
				x										x		MP7683XT	MicroPwr	
			561	x				x					x	x		SP1078	† Sipex-HSD	
		0.333	180	x							x			x		MP7693B	◊ MicroPwr	
		0.35	130	x				x	x		x				x	ADC0831BC	Ti	
				x				x	x		x				x	ADC0832BC	Ti	15
		0.4	400	x										x		TDC1001	TRWLSI	
		0.6	1250	x	x			x						x	x	ADC815C	Datel	
				x	x			x						x	x	ADC815M	Datel	
						x		x	x				x	x	x	MN5815	† MicroNet	
		0.75	3275	x	x			x					x	x	x	4130	TeledyneC	20
		0.9	1550	x				x	x				x	x	x	MN5101	MicroNet	
				x				x	x				x	x	x	MN5101H	† MicroNet	
		1*	800	x				x					x		x	AM6148C	AMD	
		1	1250	x	x			x						x	x	ADC825C	Datel	
				x	x			x						x	x	ADC825M	Datel	25
						x		x	x				x	x	x	MN5825	† MicroNet	
		1.2	1800			x		x					x			HAS0802	AD	
		1.3	25	x							x			x		MAX150	† Maxim	
		1.5	75	x	x	x		x	x		x					PM0820A	† AD	
				x	x	x		x	x		x					PM0820E	AD	30
				x	x	x		x	x		x					PM0820G	AD	
			1550	x		x		x					x	x	x	MN5100	MicroNet	
				x		x		x					x	x	x	MN5100H	† MicroNet	
		1.52	875	x							x			x		KAD0820A	Samsung	
		1.6	50	x							x			x		ADC0820BCD	Maxim	35
				x							x			x		ADC0820BCN	Maxim	
				x							x			x		ADC0820BD	† Maxim	
				x							x		x	x		MAX150BE	Maxim	
				x							x		x	x		MAX150BL	Maxim	
				x							x		x	x		MAX150BM	† Maxim	40
				x							x			x		MX7820C	Maxim	
				x							x			x		MX7820L	Maxim	
				x							x			x		MX7820U	† Maxim	
		75		x							x					AD7820L	AD (3320)	
				x							x					AD7820U	† AD (3320)	45
		2	50	x						x	x		x	x		MAX154BC	Maxim	
				x						x	x		x	x		MAX154BE	Maxim	
				x						x	x		x	x		MAX154BM	† Maxim	
				x						x	x		x	x		MAX158BC	Maxim	
				x						x	x		x	x		MAX158BE	Maxim	50
				x						x	x		x	x		MAX158BM	† Maxim	
		80		x						x	x			x		MX7824C	Maxim	
				x						x	x			x		MX7824L	Maxim	
				x						x	x			x		MX7824U	† Maxim	
				x						x	x			x		MX7828C	Maxim	50
				x						x	x			x		MX7828L	Maxim	
				x						x	x			x		MX7828U	† Maxim	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Conversion Time ± 1/2LSB μs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
8	1/2	2	1300	x	x								x	x	x	MN5160	MicroNet	(Cont'd)
				x	x								x	x	x	MN5160H	† MicroNet	
				x	x								x	x	x	MN5160H/B	† MicroNet	
		2.5	35 *	x							x			x		ADC0820B	◊ National	
			75	x						x	x			x		MAX154	† Maxim	5
				x						x	x			x		MAX158	† Maxim	
			650			x	x	x					x	x	x	ADC542B-8	† Sipex-HSD	
						x	x	x					x	x	x	ADC542C-8	Sipex-HSD	
			915			x							x	x	x	MN5140	MicroNet	10
						x							x	x	x	MN5140H	† MicroNet	
					x								x	x	x	MN5141	MicroNet	
					x								x	x	x	MN5141H	† MicroNet	
					x								x	x	x	MN5142	MicroNet	
				x									x	x	x	MN5142H	† MicroNet	15
				x									x	x	x	MN5143	MicroNet	
													x	x	x	MN5143H	† MicroNet	
			1000			x							x	x	x	MN5130	MicroNet	
						x							x	x	x	MN5130H	† MicroNet	
					x								x	x	x	MN5131	MicroNet	
					x								x	x	x	MN5131H	† MicroNet	20
					x								x	x	x	MN5132	MicroNet	
					x								x	x	x	MN5132H	† MicroNet	
				x									x	x	x	MN5133	MicroNet	
				x									x	x	x	MN5133H	† MicroNet	
				x	x	x							x	x	x	MN5150	MicroNet	25
				x										x		HS5150B	Sipex-HSD	
				x										x		HS5150C	Sipex-HSD	
		2.8	500	x		x	x	x			x					LTC1099AC	LinearTech	
				x		x	x	x			x					LTC1099AI	LinearTech	
				x		x	x	x			x					LTC1099AM	† LinearTech	30
			650			x	x	x					x	x	x	HSADC82	Sipex-HSD	
		3.8	120	x	x				x	x			x	x		MAX155A	◊† Maxim	
				x	x					x	x		x	x		MAX156A	◊† Maxim	
				x	x					x	x		x	x		MAX156B	◊† Maxim	
		4	25	x										x		MAX160	† Maxim	35
		5		x									x			AD9058	AD (3319)	
			15 *								x					AD7575K	AD (3320)	
			30	x										x		MAX160C	Maxim	
				x										x		MAX160E	Maxim	
				x										x		MAX160M	† Maxim	40
			35	x							x		x	x		MAX165A	◊† Maxim	
				x							x		x	x		MAX166A	◊† Maxim	
				x							x			x		MX7575B	Maxim	
				x							x			x		MX7575K	◊ Maxim	
				x							x			x		MX7575T	† Maxim	45
		6	1000			x							x	x	x	MN5120	MicroNet	
						x							x	x	x	MN5120H	† MicroNet	
					x								x	x	x	MN5121	MicroNet	
					x								x	x	x	MN5121H	† MicroNet	50
					x								x	x	x	MN5122	MicroNet	
					x								x	x	x	MN5122H	† MicroNet	
				x									x	x	x	MN5123	MicroNet	
				x									x	x	x	MN5123H	† MicroNet	

(Continued)

Bin.—Binary
Off.—Offset
Compl.—Complementary
Magn.—Magnitude
CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference
Mux. In.—Multiplexed Inputs
S&H—Sample and Hold
Par. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
8	1/2	8	20	x		x	x	x		x	x	x	x	x	x	ADC08021B	National	(Cont'd)
				x		x	x	x		x	x	x	x	x	x	ADC08032B	National	
				x		x	x	x		x	x	x	x	x	x	ADC08034B	National	
				x		x	x	x		x	x	x	x	x	x	ADC08038B	National	
9		4		x						x	x				x	TLC540	TI	5
				x						x	x				x	TLC540M	† TI	
		125 *		x	x								x	x		ZN448E	GEC Plessey	
				x	x								x	x		ZN448J	† GEC Plessey	
10		11		x						x	x		x		x	MC145040	◊ Motorola	10
		35		x										x		MX7576B	Maxim	
				x										x		MX7576K	◊ Maxim	
				x										x		MX7576T	† Maxim	
		50		x	x									x		AD7821B	◊ AD (3320)	
				x	x									x		AD7821K	◊ AD (3320)	
				x	x									x		AD7821T	◊† AD (3320)	15
				x	x									x		MX7821	◊† Maxim	
		450		x										x		MN5901	† MicroNet	
15				x									x	x		AD670A	AD (3322)	
				x									x	x		AD670J	AD (3322)	
				x									x	x		AD670S	† AD (3322)	20
		6.5 *		x						x	x			x		TLC532A	TI	
		15		x						x	x	x		x		SDA0808A	Siemens	
				x						x	x	x		x		SDA0808B	Siemens	
		30		x	x		x						x			AD7574B	◊ AD (3322)	25
				x	x		x						x			AD7574K	◊ AD (3322)	
				x	x		x						x			AD7574T	◊† AD (3322)	
				x	x		x						x	x		MX7574B	Maxim	
				x	x		x						x	x		MX7574K	Maxim	
				x	x		x						x	x		MX7574T	† Maxim	
		125 *		x	x								x	x		ZN427E-8	GEC Plessey	30
				x	x								x	x		ZN427J-8	† GEC Plessey	
		450		x	x	x	x	x						x		PM7574A	† AD (3322)	
				x	x	x	x	x						x		PM7574E	AD (3322)	
				x	x	x	x	x						x		PM7574G	AD (3322)	
16.25		250		x	x						x			x	x	CS7820	Crystal	35
17		15		x							x				x	TLC548C	TI	
				x							x				x	TLC548M	† TI	
				x							x				x	TLC549C	TI	
19		6 *		x							x				x	TLC549	TI	
				x							x				x	TLC549M	† TI	40
20				x									x			AD9078	AD	
		10		x		x	x	x		x	x				x	TLC542I	TI	
		11		x						x	x		x		x	MC145041	◊ Motorola	
		25		x						x				x		MAX161	† Maxim	
		500		x				x						x		TDC1038	◊† TRWLSI	45
				x				x						x		TDC1058	◊† TRWLSI	
25		14		x						x	x			x		SI8601	Siliconix	
		35		x						x				x		MAX161C	Maxim	
				x						x				x		MAX161E	Maxim	
				x						x				x		MAX161M	† Maxim	50
30		—		x									x			AD673J	AD (3322)	
				x									x			AD673S	† AD (3322)	
		6.5 *		x						x	x			x		TLC533A	TI	(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ±LSB	Conversion Time ± 1/2LSB μs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. in.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output (Cont'd)																		
8	1/2	32		x						x	x				x	ADC0811	◊ National	
				x						x					x	ADC0838B	TI	
		15 *								x	x				x	ADC0811BC	◊ National	
										x	x				x	ADC0811BJ	◊† National	
		55		x						x	x			x		MC14442	◊ Motorola	5
40	10 *			x						x				x		ADC0844B	National	
		15		x						x				x		ADC0848B	National	
				x						x				x		ADC0848C	National	
		175 *		x	x								x	x		AD570J	AD (3322)	
				x	x								x	x		AD570S	† AD (3322)	10
60	15 *			x												ADC0841B	† National	
66.6	40			x						x				x		MX7581C	Maxim	
				x						x				x		MX7581L	Maxim	
80	10			x											x	ADC0831B	National	
				x											x	ADC0832B	National	15
				x											x	ADC0833B	National	
				x											x	ADC0834B	National	
				x											x	ADC0838B	National	
		875		x						x					x	ADC0832B	TI	
				x						x					x	ADC0834B	TI	20
100 *	15			x										x		ADC0802	† Harris	
				x										x		ADC0803	† Harris	
				x										x		ADC0802	◊† National	
				x										x		ADC0802C	◊ National	
				x										x		ADC0803C	National	25
100	15			x						x				x		ADC0808	◊ National	
				x						x				x		ADC0816C	National	
		30		x						x				x		ADC0816	† National	
70							x						x	x	x	MN5065	MicroNet	
							x						x	x	x	MN5065H	† MicroNet	30
						x							x	x	x	MN5066	MicroNet	
						x							x	x	x	MN5066H	† MicroNet	
75				x						x					x	MB4052	Fujitsu	
875				x						x	x			x		KAD0808	Samsung	
100 *	875			x										x		ADC0803C	Signetics	35
100	875			x										x		ADC0803C	TI	
	900							x							x	MB40547-8	Fujitsu	
256				x						x				x		ADC0829	National	
300	x										x			x		MP7690T	MicroPwr	
	15 *			x						x						L530	◊ SGS-Thomson	40
	500			x		x	x	x		x				x	x	ADC0830	National	
1250 *	20 *			x	x									x		4140	TeledyneC	
				x	x									x		4142	TeledyneC	
1800	25			x								x		x		TSC8700	TeledyneC	
				x								x		x		TSC8703	TeledyneC	45
				x	x							x		x		4143	† TeledyneC	
3/4	0.01	1500		x									x			AD9011J	AD	
				x									x			AD9011K	AD	
				x									x			AD9011S	† AD	
				x									x			AD9011T	† AD	50
	0.05	300		x						x				x		MP7690J	MicroPwr	
				x						x				x		MP7690S	MicroPwr	
		420		x		x	x	x			x					AD9048	AD (3319)	

(Cont'd)

(Cont'd)

INTERFACE

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
8	3/4	0.05	1000	x			x	x						x		HI3-5700A-9	Harris	(Cont'd)
				x			x	x						x		HI3-5700J-9	Harris	
	0.4	180		x						x				x		MP7783	MicroPwr	
	6	25		x	x									x		ADC908A	† AD (3322)	5
				x	x									x		ADC908E	† AD (3322)	
				x	x									x		ADC908G	AD (3322)	
	15	30		x	x		x						x			AD7574A	◊ AD (3322)	10
				x	x		x						x			AD7574J	◊ AD (3322)	
				x	x		x						x			AD7574S	◊† AD (3322)	
				x	x		x						x	x		MX7574A	Maxim	
				x	x		x						x	x		MX7574J	Maxim	
				x	x		x						x	x		MX7574S	† Maxim	
				x	x		x						x			MP7574A	† MicroPwr	15
				x	x		x						x			MP7574B	MicroPwr	
				x	x		x						x			MP7574J	MicroPwr	
				x	x		x						x			MP7574K	MicroPwr	
					x		x						x			MP7574T	MicroPwr	
		450		x	x	x	x	x						x		PM7574B	† AD (3322)	20
				x	x	x	x	x						x		PM7574F	AD (3322)	
				x	x	x	x	x						x		PM7574H	AD (3322)	
3/4 *	20 MSPS	555 *		x									x	x		HI-5700	Harris (3511)	
3/4	66.6	—		x												AD7581K	◊ AD (3322, 3325)	
	40			x						x				x		MX7581B	Maxim	25
				x						x				x		MX7581K	Maxim	
	100	875		x						x	x			x		KAD0809	Samsung	
	116	15		x		x	x	x		x				x	x	ADC0808M	† TI	
7/8	6	25		x	x									x		ADC908B	† AD (3322)	30
				x	x									x		ADC908F	AD (3322)	
				x	x									x		ADC908H	AD (3322)	
	15	30		x	x		x						x			MP7574S	† MicroPwr	
0.1	0.025	500		x									x	x		MB40558	◊ Fujitsu	40
0.5	9.0			x												TLC545I	TI	
	17			x												TLC546I	TI	
0.6	0.05	715		x										x		ADC208/883B	Datel (3440)	35
0.75	100	1.5		x						x	x			x		TL0808	◊ TI	
	30			x						x	x			x		ADC0808	◊† TI	
1		1400											x	x		SP1072	† Sipex-HSD	
	0.0033	2000		x		x		x						x		AD9028	◊† AD (3319)	45
				x		x		x						x		AD9038	◊† AD (3319)	
	0.0067	750		x										x		AD9002	† AD (3319)	50
	0.04	480		x									x	x		MB40578	Fujitsu	
	0.056	750		x										x		BT251	Brooktree	
		1000		x										x		BT253	Brooktree	
	0.066	350		x						x				x		MP7684AJ	◊ MicroPwr	45
				x						x				x		MP7684AS	◊ MicroPwr	
				x						x				x		MP7690AA	MicroPwr	
				x						x				x		MP7690AS	† MicroPwr	
				x						x				x		MP8780J	◊ MicroPwr	
	0.067	350		x									x	x		BT208	◊ Brooktree	50
	0.1	850		x	x								x	x		MN5820	MicroNet	
		850 *		x	x								x	x		MN5820H	† MicroNet	
	0.10	300		x										x		MP7684S	† MicroPwr	
	0.15	1750				x							x	x		AD9502	† AD	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ±LSB	Conversion Time Dis. ±½LSB μs	Power mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		
(Cont'd)																		
8	1	0.2	45	x							x			x		MP7690A	MicroPwr	
		75		x										x		MP7683XA	MicroPwr	
				x										x		MP7683XJ	MicroPwr	
				x										x		MP7683XS	MicroPwr	
		0.35	130	x			x	x		x					x	ADC0831AC	Ti	5
				x			x	x		x					x	ADC0832AC	Ti	
		1.2	75	x							x			x		TLC0820A	Ti	
		1.5	75	x	x	x	x	x			x					PM0820B	AD	
				x	x	x	x	x			x					PM0820F	AD	
				x	x	x	x	x			x					PM0820H	AD	10
				x							x			x		ADC0820C	National	
		1.52	875	x							x			x		KAD0820	Samsung	
		1.6	40													AD7824K	AD (3320, 3325)	
																AD7824T	AD (3320, 3325)	
																AD7828K	AD (3320, 3325)	15
																AD7828T	AD (3320, 3325)	
			50	x							x			x		ADC0820CCD	Maxim	
				x							x			x		ADC0820CCN	Maxim	
				x							x			x		ADC0820CD	Maxim	
				x							x		x	x		MAX150CC	Maxim	20
				x							x		x	x		MAX150CE	Maxim	
				x							x		x	x		MAX150CM	Maxim	
				x							x			x		MX7820B	Maxim	
				x							x			x		MX7820K	Maxim	
				x							x			x		MX7820T	Maxim	25
			75	x							x					AD7820K	AD (3320)	
				x							x					AD7820T	AD (3320)	
			80	x	x						x			x		MP0820	MicroPwr	
	2		50	x						x	x		x	x		MAX154CC	Maxim	30
				x						x	x		x	x		MAX154CE	Maxim	
				x						x	x		x	x		MAX154CM	Maxim	
				x						x	x		x	x		MAX158CC	Maxim	
				x						x	x		x	x		MAX158CE	Maxim	
				x						x	x		x	x		MAX158CM	Maxim	
			60	x							x		x	x		AD7569	AD (3314, 3320, 3350)	35
			80	x						x	x			x		MX7824B	Maxim	
				x						x	x			x		MX7824K	Maxim	
				x						x	x			x		MX7824T	Maxim	
				x						x	x			x		MX7828B	Maxim	
				x						x	x			x		MX7828K	Maxim	40
				x						x	x			x		MX7828T	Maxim	
		2.5	50 *	x			x	x					x	x		TLC0820AC	Ti	
			75	x	x	x	x	x	x		x	x		x	x	LTC1099C	LinearTech	
			1010		x										x	HS5131B	Sipex-HSD	45
					x										x	HS5131C	Sipex-HSD	
		2.8	500	x		x	x	x			x					LTC1099I	LinearTech	
				x		x	x	x			x					LTC1099M	LinearTech	
		3.8	120	x	x					x	x		x	x		MAX155B	Maxim	
	5		15 *								x					AD7575J	AD (3320)	
			35	x							x		x	x		MAX165B	Maxim	50
				x							x		x	x		MAX166B	Maxim	
				x							x			x		MX7575A	Maxim	

(Continued)

Bin.—Binary Compl.—Complementary CTC—Compl. 2's Compl. Mux. In.—Multiplexed Inputs Par. Out.—Parallel Output
 Off.—Offset Magn.—Magnitude Int. Ref.—Internal Reference S&H—Sample and Hold Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time μ s	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
8	1	5	35	x							x			x		MX7575J	Maxim	(Cont'd)
				x							x			x		MX7575S	Maxim	
	8	20		x		x	x	x		x	x	x	x	x	x	ADC08031C	National	
				x		x	x	x		x	x	x	x	x	x	ADC08031CM	National	
				x		x	x	x		x	x	x	x	x	x	ADC08032C	National	5
				x		x	x	x		x	x	x	x	x	x	ADC08032CM	National	
				x		x	x	x		x	x	x	x	x	x	ADC08034C	National	
				x		x	x	x		x	x	x	x	x	x	ADC08034CM	National	
				x		x	x	x		x	x	x	x	x	x	ADC08038C	National	
				x		x	x	x		x	x	x	x	x	x	ADC08038CM	National	10
	9	125		x	x								x	x		ZN449E	GEC Plessey	
				x	x								x	x		ZN449J	GEC Plessey	
	10	15 *		x										x		AD7576B	AD (3322)	
				x										x		AD7576K	AD (3322)	
				x										x		AD7576S	AD (3322)	15
		35		x										x		MX7576A	Maxim	
				x										x		MX7576J	Maxim	
				x										x		MX7576S	Maxim	
	18	4		x						x	x				x	TLC541	Ti	
	20	10		x		x	x	x		x	x				x	TLC542M	Ti	20
	32			x						x					x	ADC0834A	Ti	
				x						x					x	ADC0838A	Ti	
		12.5		x						x					x	ADC0831C	National	
				x						x					x	ADC0832C	National	
				x						x					x	ADC0833C	National	25
				x						x					x	ADC0834C	National	
				x						x					x	ADC0838C	National	
		15 *								x	x				x	ADC0811CC	National	
										x	x				x	ADC0811CJ	National	
	40	12.5		x						x				x		ADC0844B	National	30
	100 *	12.5		x										x		ADC0804	Harris	
				x										x		ADC0804C	National	
				x										x		ADC0804C	Signetics	
	100	15		x						x				x		ADC0809C	National	
				x						x				x		ADC0817	National	35
				x						x				x		ADC0809M	Ti	
		160													x	MB4056	Fujitsu	
		875		x						x	x			x		KAD0817	Samsung	
				x										x		ADC0805C	Ti	
		900						x							x	MB40547-7	Fujitsu	40
	110 *	1.5 *		x							x			x		MSM5204	OKI (3605)	
	110	12.5		x										x		ADC0805C	National	
				x										x		ADC0805C	Signetics	
	112 *	15		x						x					x	μ PD7001	NEC	
	114	15		x			x	x						x	x	ADC0804C	Ti	45
	300	25													x	MB4063	Fujitsu	
	2000	6.5 *		x									x		x	TC5091A	Toshiba (3727)	
		300		x									x		x	TC5090A	Toshiba (3727)	
	8300	100 *			x	x	x	x	x	x	x				x	IR3K01	Sharp	50
	1/2	0.05	800	x										x		CX20052A	Sony	
	1 1/4	4	300	x										x		μ PD7003	NEC	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear- ity Error ± LSB	Conver- sion Time ± ½LSB µs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Int- egra- ting	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		
(Cont'd)																		
8	1 1/4																	
		100	1.5	x						x	x			x		TL0809	◊ TI	
			15	x						x	x			x		ADC0809	◊ TI	
	1.5	90	300					x		x	x				x	PCF8591	◊ Signetics	
	17/8	66.6	40	x						x				x		MX7581A	Maxim	
				x						x				x		MX7581J	Maxim	5
	2	10	15 *	x										x		AD7576A	AD (3322)	
				x										x		AD7576J	AD (3322)	
				x										x		AD7576S	† AD (3322)	
		50	255	x										x		ADC0800P	† National	
				x										x		ADC0800PC	National	10
8 (A/D and 10 D/A Video)																		
	1/2		0.026										x	x		KSV3100A	Samsung	
8 (A/D, D/A)																		
	1/2		0.05								x		x	x		KSV3100AN-7	Samsung	
				x							x		x	x		KSV3110-9	Samsung	
				x							x		x	x		KSV3110N-10	Samsung	
8 (A/D,D/A)																		
	1/2		0.05								x		x	x		KSV3110N-8	Samsung	15
8 (analog to pulse width converter for microprocessor systems)																		
	1/2		32							x						MC14447	Motorola	
			75 *							x						µA9708C	National	
										x						µA9708M	† National	
8 (flash)																		
	1/2		0.02	x												TDC1025	TRWLSI	
			0.05	x										x		THC1068	† TRWLSI	
			1320	x										x		TDC1048	◊† TRWLSI	20
				x										x		TDC1048	◊ TRWLSI	
	1		150	x												CA3318	Harris	
				x												CA3318C	Harris	
8 (quad)																		
	1/2		2	x			x	x								MB8023	Fujitsu	25
			5	x			x	x								MB8022	Fujitsu	
			38	x			x	x								MB86021	Fujitsu	
8 (video digital converter)																		
	1/2		0.05	x										x		µPD6950	NEC	
8 Video Flash Converter																		
	1/2		0.05													MC10319	Motorola	
9																		
	1		0.05	x									x	x		CX20220A-2	Sony	30
			40	x										x		MP7696A	MicroPwr	
9 (flash)																		
	1/2		0.03	x										x		THC1069	† TRWLSI	
			0.033	x			x	x								TDC1049	TRWLSI	
10																		
																TAC1020	TRWLSI	
																TAC1025	TRWLSI	35
	1/2		0.025	x									x			CAV1040	AD	
			0.05	x				x						x		HA19214	Hitachi	
			1800	x								x				MNSA1040	† MicroNet	
			7500	x										x		TDC1020	† TRWLSI	
			0.425	x	x		x									ADC510C	Datel	40
			0.45	x	x		x									ADC510M	Datel	
			0.65	x	x		x									ADC515C	Datel	
			0.7	x	x		x									ADC515M	Datel	
			0.8	x									x	x	x	ADADC816	AD	
			2900	x				x					x	x	x	ADC816/883	† Datel	45
			3600	x	x			x					x	x	x	ADC816C	Datel	
				x	x			x					x	x	x	ADC816M	Datel	
(Continued)																		

Bin.—Binary Compl.—Complementary CTC—Compl. 2's Compl. Mux. In.—Multiplexed Inputs Par. Out.—Parallel Output
Off.—Offset Magn.—Magnitude Int. Ref.—Internal Reference S&H—Sample and Hold Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
10	1/2	1	40	x							x			x		MP7695A	MicroPwr	5
				x							x			x		MP7695S	MicroPwr	
		500 *		x	x								x	x	x	ZN433BJ-10	GEC Plessey	
				x	x								x	x	x	ZN433CJ-10	GEC Plessey	
				x	x								x	x	x	ZN433J-10	GEC Plessey	
		2100		x		x					x		x	x		ADS115C	Datel	10
				x		x					x		x	x		ADS115M	Datel	
					x		x				x		x	x		ADS116C	Datel	
					x		x				x		x	x		ADS116M	Datel	
		1800 *				x	x						x			HAS1002	AD	
		2900		x				x					x	x	x	ADC826/883	Datel	15
		3600		x	x			x					x	x	x	ADC826C	Datel	
				x	x			x					x	x	x	ADC826M	Datel	
		755 *		x	x								x	x	x	AD579K	AD (3322)	
				x	x								x	x	x	AD579T	AD (3322)	
		755 *		x	x								x	x	x	AD579J	AD (3322)	20
5		150		x			x	x			x		x			HI3-7152B-9	Harris	
				x			x	x			x		x			HI3-7152K-5	Harris	
				x				x						x		HI7152	Harris	
		215		x				x								MAX173C	Maxim	
				x				x								MAX173M	Maxim	25
		975		x			x	x						x		ADC84-10	MicroNet	
				x			x	x						x		ADC85-10	MicroNet	
				x			x	x						x		ADC85C-10	MicroNet	
		1400 *				x	x	x					x	x	x	MN5240	MicroNet	
6		400 *														ADC910E	AD (3322)	30
8		1400 *				x	x	x					x	x	x	MNADC84-10	MicroNet	
						x	x	x					x	x	x	MNADC85-10	MicroNet	
10		150		x				x						x		HI7151	Harris	
		1800				x	x	x					x	x	x	ADADC85-10	AD	
13				x												CA3310	Harris	35
		15														CA3310A	Harris	
14		20		x		x	x	x		x	x				x	ADC1031B	National	
				x		x	x	x		x	x				x	ADC1034B	National	
				x		x	x	x		x	x				x	ADC1038B	National	
15		—		x									x			AD573K	AD (3322)	40
				x									x			AD573S	AD (3322)	
				x		x	x	x				x		x		SDA1810D	Siemens	
		15		x						x	x	x		x		SDA0810A	Siemens	
				x						x	x	x		x		SDA0810B	Siemens	
		360		x	x								x	x		ZN501AJ	GEC Plessey	45
20				x									x		x	AD575K	AD (3322)	
		12.5		x				x		x	x				x	LTC1090C	LinearTech	
				x				x		x	x				x	LTC1090M	LinearTech	
				x				x		x	x				x	LTC1091C	LinearTech	
				x				x		x	x				x	LTC1091M	LinearTech	50
				x				x			x				x	LTC1092AC	LinearTech	
				x				x			x				x	LTC1092AM	LinearTech	
				x				x			x				x	LTC1092C	LinearTech	
				x				x			x				x	LTC1092M	LinearTech	
		350 *		x	x								x	x	x	ZN432BJ-10	GEC Plessey	55
				x	x								x	x	x	ZN432CJ-10	GEC Plessey	
				x	x								x	x	x	ZN432E-10	GEC Plessey	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Conversion Time ± ½LSB μS	Power Dis- mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
10	1/2	20	350 *	x	x								x	x	x	ZN432J-10	† GEC Plessey	5
			380	x		x	x	x					x	x	x	ZN503AJ	† GEC Plessey	
				x		x	x	x					x	x	x	ZN504CJ	GEC Plessey	
				x		x	x	x					x	x	x	ZN504E	GEC Plessey	
			770	x		x	x	x					x	x	x	TL503	† TI	
			8000	x									x	x		THC1070	† TRWLSI	10
21		800				x	x	x					x	x	x	ADADC80Z-10	† AD	
22		705		x			x	x						x		ADC80-10	MicroNet	
25		400		x						x			x	x		MB4051	Fujitsu	
50		100		x				x						x	x	ADC1025	National	15
			875	x										x		ADC1005	National	
80		—		x	x		x							x	x	AD7571K	AD	
5000		20 *		x	x									x		4144	TeledyneC	
6000		25		x								x		x		TSC8701	TeledyneC	
				x								x		x		TSC8704	TeledyneC	20
3/4		6	400 *													ADC910A	AD (3322)	
																ADC910G	AD (3322)	
0.5		10	150					x			x			x		HI3-7151B-9	Harris	
								x			x			x		HI3-7151K-5	Harris	
1		0.025	1300	x							x			x		SPT7814	Signal Proc	25
		0.04	7.3	x		x		x						x		CLC920	† Comlinear	
		0.05	300	x							x			x		SPT7810	Signal Proc	
			330	x										x		CX20220A-1	Sony	
		0.105	1300		x						x		x	x		4194	TeledyneC	
		1	15	x						x				x		μPD7004	NEC	30
			3275	x	x			x					x	x	x	4131	TeledyneC	
		1.8	235	x		x	x	x			x			x	x	ADC1061C	National	
				x		x	x	x			x			x	x	ADC1061CM	† National	
				x							x			x		TMC1061	◊ TRWLSI	
		2		x												AD9060	AD (3319)	35
		2.5	275	x			x	x					x		x	MAX151AC	Maxim	
		5		x												AD9020	AD (3319)	
			150	x			x	x			x		x			HI3-7152A-9	Harris	
				x			x	x			x		x			HI3-7152J-5	Harris	
								x		x	x			x		HI3-7153A-9	Harris	40
								x		x	x			x		HI3-7153J-5	Harris	
		6	400 *													ADC910B	AD (3322)	
																ADC910F	◊ AD (3322)	
																ADC910H	AD (3322)	
			1100			x	x	x					x	x	x	ADADC84-10	AD	45
10		150						x			x			x		HI3-7151A-9	Harris	
								x			x			x		HI3-71515-5	Harris	
14		20		x		x	x	x		x	x				x	ADC1031C	National	
				x		x	x	x		x	x				x	ADC1031CM	† National	
				x		x	x	x		x	x				x	ADC1034C	National	50
				x		x	x	x		x	x				x	ADC1034CM	† National	
				x		x	x	x		x	x				x	ADC1038C	National	
				x		x	x	x		x	x				x	ADC1038CM	† National	
				x									x	x		AD5731	AD (3322)	
		360		x	x								x	x		ZN502CJ	GEC Plessey	50
				x	x								x	x		ZN502E	GEC Plessey	
		770		x	x								x	x		TL502	TI	

(Continued)

Bin.—Binary Compl.—Complementary CTC—Compl. 2's Compl. Mux. In.—Multiplexed Inputs Par. Out.—Parallel Output
Off.—Offset Magn.—Magnitude Int. Ref.—Internal Reference S&H—Sample and Hold Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Conversion Time ± ½LSB μs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
10	1	18.5	100	X							X			X		AD7579	† AD	(Cont'd)
		100		X						X				X		AD7580	† AD (3320)	
	20			x									x		x	AD575J	AD (3322)	
				x									x		x	AD575S	† AD (3322)	
	21	15		x			x	x		x	x	x			x	TLC1541M	† TI	5
	200	—		x										x		ADC1001C	National	
				x										x		ADC1021C	National	
	15000	300														μPD7002C-1	NEC	
	1.5	2.5	275	x			x	x					x		x	MAX151BC	Maxim	
	2	14		x											x	CDP68HC68A2	Harris	10
10	Plus Sign																	
	1/2	80	—	x	x		x							x	x	AD7571T	† AD	
	1	80	—	x	x		x							x	x	AD7571J	AD	
				x	x		x							x	x	AD7571S	† AD	
11	2	1	100	x	x									x	x	MP7685K	MicroPwr	15
				x	x									x	x	MP7685T	† MicroPwr	
	2	100		x	x									x	x	MP7685J	MicroPwr	
				x	x									x	x	MP7685S	† MicroPwr	
12		1/2	27.5	x				x	x		x			x		ML2233BC	MicroLinear	
		20	1400	x	x					x				x		DAS863	† Adv Analog	
		100		x						x				x		AD7582B	AD (3322, 3325)	20
				x						x				x		AD7582K	AD (3322, 3325)	
				x						x				x		AD7582T	† AD (3322, 3325)	
	1/4	7	250	x				x								S5012-K7	Gould AMI	
		10	745			x	x	x						x	x	ADC84	† Adv Analog	
						x	x	x						x	x	ADC85	† Adv Analog	25
					x	x	x	x						x	x	ADC87	† Adv Analog	
		12	250	x				x								S5012-K12	Gould AMI	
		13	470			x	x							x	x	ADC5211	‡ Adv Analog	
						x	x							x	x	ADC5212	Adv Analog	
		590				x	x							x	x	ADC5210	‡ Adv Analog	30
						x	x							x	x	ADC5213	‡ Adv Analog	
						x	x							x	x	ADC5214	‡ Adv Analog	
						x	x							x	x	ADC5215	‡ Adv Analog	
						x	x							x	x	ADC5216	‡ Adv Analog	
						x	x							x	x	ADC5217	‡ Adv Analog	35
						x	x							x	x	ADC5610	‡ Adv Analog	
						x	x							x	x	ADC5611	‡ Adv Analog	
						x	x							x	x	ADC5612	‡ Adv Analog	
						x	x							x	x	ADC5613	‡ Adv Analog	
						x	x							x	x	ADC5614	‡ Adv Analog	40
						x	x							x	x	ADC5615	‡ Adv Analog	
						x	x							x	x	ADC5616	‡ Adv Analog	
						x	x							x	x	ADC5617	‡ Adv Analog	
						x	x							x	x	NE5217	‡ Signetics	
						x	x							x	x	SA5217	‡ Signetics	45
	24	250		x				x								S5012-K24	Gould AMI	
	50	590				x	x							x	x	ADC5200	‡ Adv Analog	
						x	x							x	x	ADC5201	‡ Adv Analog	
						x	x							x	x	ADC5202	‡ Adv Analog	
						x	x							x	x	ADC5203	‡ Adv Analog	50
						x	x							x	x	ADC5204	‡ Adv Analog	
						x	x							x	x	ADC5205	‡ Adv Analog	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linearity Error \pm LSB	Conversion Time \pm 1/2 LSB μ s	Power Dis. (max.) mW	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/4	50	590			x	x						x	x	x	ADC5206	‡ Adv Analog	
						x	x						x	x	x	ADC5207	‡ Adv Analog	
		50 ms	215	x					x	x		x		x		MAX133	Maxim	
		50000 ms	215	x					x	x		x		x		MAX134	Maxim	
1/2				x		x	x	x			x					AD368	AD (3321)	5
		1500			x			x	x			x	x			MP2316	Analogic	
					x			x	x			x	x			MP2321	Analogic	
		2735		x	x			x		x	x		x	x		DAS5712	Adv Analog	
	0.05	1050		x								x				MNSA1205	† MicroNet	
		4000		x								x			x	SCA3012	STC	10
	0.1	1000		x								x				MNSA1210	† MicroNet	
		4300			x		x				x			x	x	ADS130C	Datel (3440)	
	0.2	2700		x									x	x		SP9550	† Sipex-HSD	
	0.3	2100		x	x	x	x						x	x		ADC530MC	Datel (3440)	
				x	x	x	x						x	x		ADC530MM	† Datel (3440)	15
	0.5	1500		x	x								x	x		MN5247	† MicroNet	
		1800		x	x								x	x		ADC500C	Datel (3440)	
				x	x	x	x						x	x		ADC500MM	† Datel (3440)	
				x	x	x							x	x		4192	† TeledyneC	
		2000		x									x	x		SP9548	† Sipex-HSD	20
		2600		x	x		x	x			x					ADC00305	ILC-DDC	
		3000		x	x		x	x			x					ADC00302	† ILC-DDC	
		3200		x	x	x	x				x		x	x		ADS132C	Datel (3440)	
				x	x	x	x				x		x	x		ADS132M	Datel (3440)	
	0.55	1800		x	x	x	x						x	x		ADC505C	Datel (3440)	25
				x	x								x	x		ADC505M	Datel (3440)	
	0.6	3000		x									x	x	x	ADC6012	† Adv Analog	
					x								x	x	x	ADC6013	† Adv Analog	
	0.7	1800		x	x	x	x						x	x		ADC508C	Datel (3440)	
				x	x	x	x						x	x		ADC508M	Datel (3440)	30
	0.8			x												ADC8500	Datel	
		1900		x	x	x	x						x	x		ADC520C	Datel (3440)	
				x	x	x	x						x	x		ADC520M	Datel (3440)	
				x	x	x	x						x	x		ADC521C	Datel (3440)	
				x	x	x	x						x	x		ADC521M	Datel (3440)	35
	0.85	2850		x			x	x								MN5246A	MicroNet	
	0.91			x												ADC8505	Datel	
	1												x	x		AD375	AD	
				x												MN5246	† MicroNet	
		850		x	x						x			x		CS5412	Crystal	40
		1500				x	x	x					x	x	x	MN5245A	MicroNet	
		1700			x	x							x	x	x	ADC601K	Burr-Brown (3421)	
					x	x							x	x	x	ADC6015	† Burr-Brown	
		2200		x							x			x		AD9003	† AD (3319)	
		2700			x								x	x	x	ADC5246	‡ Adv Analog	45
				x		x					x		x	x		ADS105C	Datel	
				x		x					x		x	x		ADS105M	Datel	
					x		x				x		x	x		ADS106C	Datel	
		2700		x									x	x	x	ADC5245	‡ Adv Analog	
	1 MHz	3000		x	x			x			x			x		HAS1201K	AD	50
				x	x			x			x			x		HAS1201S	† AD	

(Continued)

Bin.—Binary
Off.—Offset
Compl.—Complementary
Magn.—Magnitude
CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference
Mux. In.—Multiplexed Inputs
S&H—Sample and Hold
Par. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. in.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		
(Cont'd)																		
12	1/2	1.4	1800	x	x	x	x	x			x		x			ADS125C	Datel	(Cont'd)
				x	x	x	x	x			x		x			ADS125M	Datel	
		2700		x	x	x	x	x			x		x	x		ADS126C	Datel	
				x	x	x	x	x			x		x	x		ADS126M	Datel	
		1.5	2350 *		x	x							x	x	x	ADC803B	Burr-Brown (3421)	5
					x	x							x	x	x	ADC803S	Burr-Brown (3421)	
		1.56	1800			x	x						x			HAS1202A	AD	
2		1800 *		x	x			x					x	x	x	ADH8516-12	ILC-DDC	
		2200		x	x			x					x	x	x	ADC817AC	Datel	
		2700				x	x	x						x	x	ADC810C	Datel	10
						x	x	x						x	x	ADC810M	Datel	
		2850		x							x				x	HAS1204	AD	
		2.2	1800 *			x	x						x			HAS1202	AD	
		2.75	750	x				x								S5412-J1	Gould AMI	
				x				x								S5412-J2	Gould AMI	15
				x				x								S5412-K1	Gould AMI	
				x				x								S5412-K2	Gould AMI	
3		100 *		x									x	x		HADC7572	† Signal Proc	
				x		x	x	x					x	x		HADC7672	† Signal Proc	
		215		x		x	x	x			x		x			ADS7800K	Burr-Brown (3420)	20
				x									x	x		MAX162AC	◊ Maxim	
				x									x	x		MAX162AI	Maxim	
				x									x	x		MAX162AM	† Maxim	
				x						x			x	x		SP7800	◊† Sipex-HSD	
		500		x	x								x	x		ADC-922	‡ AD	25
		775 *		x	x								x	x		AD578L	AD (3322)	
				x	x								x	x	x	MX578L	Maxim	
		775		x	x								x	x	x	MX578T	† Maxim	
		2200		x	x			x					x	x	x	ADC827AC	Datel	
				x	x			x					x	x	x	ADC827AM	Datel	30
		3.125	155	x	x									x		MAX183A	◊† Maxim	
4		1550				x	x	x			x		x	x	x	ADC6010	† Adv Analog	
		2700				x	x	x						x	x	ADC811C	Datel	
						x	x	x						x	x	ADC811M	Datel	
4.5		755 *		x	x								x	x	x	AD578K	AD (3322)	35
		775 *		x	x								x	x	x	MX578K	Maxim	
		775		x	x								x	x	x	MX578S	† Maxim	
		875 *		x		x	x	x							x	AD578T	† AD (3322)	
5		100 *											x			AD7572K	AD (3322)	
													x			AD7572T	† AD (3322)	40
		135 *														PM7572A05	† AD	
		155		x	x									x		MAX184A	◊† Maxim	
		215		x									x		x	MAX170A	◊† Maxim	
				x									x	x		MX7572	† Maxim	
				x									x	x		MX7572C05	Maxim	45
				x									x	x		MX7572L05	◊ Maxim	
				x									x	x		MX7572U05	† Maxim	
		1100				x	x	x					x	x	x	AD5240K	AD (3322)	
						x	x	x					x	x	x	AD5240S	AD (3322)	
						x	x	x					x	x	x	AD5240ZK	AD (3322)	50
						x	x	x					x	x	x	AD5240ZS	† AD (3322)	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	5	1120		x								x	x		HS9342B	† Sipex-HSD	5
					x								x	x		HS9342C	Sipex-HSD	
5.8		265		x			x	x					x		x	MAX171AC	Maxim	
6		775 *		x	x								x	x	x	AD578J	AD (3322)	
				x	x								x	x	x	MX578J	Maxim	
		875 *		x		x	x	x							x	AD578S	† AD (3322)	10
7													x	x		HI774K-5	Harris	
7.2		250		x	x						x			x	x	CS5012	Crystal	
7.5		25		x	x						x		x	x	x	MAX190A	o† Maxim	
7.7		80		x							x			x		TMC1251	TRWLSI	
				x							x			x		TMC12551	TRWLSI	15
8				x				x								AD7868	AD (3321, 3350, 3355)	
				x				x								AD7875	AD (3320)	
				x				x								AD7876	AD	
		150		x			x	x					x			MAX174AC	Maxim	
				x			x	x					x			MAX174AM	† Maxim	20
				x			x	x					x			MAX174BC	Maxim	
				x			x	x					x			MAX174BM	† Maxim	
450				x			x	x						x		MN774AK	MicroNet	
				x			x	x						x		MN774AL	MicroNet	
				x			x	x						x		MN774AU	† MicroNet	25
				x			x	x						x		MN774AU/B	† MicroNet	
975				x			x	x						x		ADC84-12	MicroNet	
				x			x	x						x		ADC85-12	MicroNet	
				x			x	x						x		ADC85C-12	MicroNet	
1100						x	x	x					x	x	x	ADCHZ12BC	Datel	30
1400 *						x	x	x					x	x	x	MNADC84-12	MicroNet	
						x	x	x					x	x	x	MNADC85-12	MicroNet	
						x	x	x					x	x	x	MNADC87	MicroNet	
1425				x			x	x						x		ADC87	MicroNet	
1500					x						x		x	x		AD1332	AD (3320, 3350)	35
						x	x	x					x	x	x	ADC87/883B	† Burr-Brown	
						x	x	x					x	x	x	ADC87U	Burr-Brown (3420)	
8.125		155		x	x					x	x		x	x		MAX180A	o† Maxim	
				x	x					x	x		x	x		MAX181A	o† Maxim	
8.5		10											x			ADS7803	o Burr-Brown (3420)	40
													x			ADS774	o Burr-Brown (3420)	
		125											x			ADC774KH	Burr-Brown (3420)	
450				x	x								x	x		ADC774KP	Burr-Brown (3420)	
				x	x								x	x		ADC774TH	† Burr-Brown (3420)	
9		350		x							x			x		MP774K	o MicroPwr	45
				x										x		MP774T	† MicroPwr	
9 *		1750		x	x					x	x		x	x		HDAS16MC	Datel (3441)	
				x	x					x	x		x	x		HDAS8MC	Datel (3441)	
10				x		x	x	x						x	x	AD7672	AD (3322)	
		155		x	x									x		MAX185A	o† Maxim	
		215		x									x	x		MAX172A	o† Maxim	
		450 *				x	x	x					x	x	x	ADC84	Burr-Brown (3420)	(Continued)

Bin.—Binary
Off.—Offset

Compl.—Complementary
Magn.—Magnitude

CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference

Mux. In.—Multiplexed Inputs
S&H—Sample and Hold

Par. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	10	450 *			x	x	x					x	x	x	ADC85H	Burr-Brown (3420)	(Cont'd)
						x	x	x					x	x	x	ADC87H	Burr-Brown	
		660		x							x		x	x		ADS807K	Burr-Brown (3420)	
				x							x		x	x		ADS808K	Burr-Brown (3420)	
		1100				x	x	x					x	x	x	ADADC84-12	AD	5
		1200				x	x	x					x	x	x	HSADC85B	† Sipex-HSD	
						x	x	x					x	x	x	HSADC85C	Sipex-HSD	
		1800				x	x	x					x	x	x	ADADC85-12	AD	
		2000		x	x					x	x		x	x		HS9403B	† Sipex-HSD	10
				x	x					x	x		x	x		HS9403C	Sipex-HSD	
		5000		x							x		x	x		THC1201	† TRWLSI	
				x							x		x	x		THC1202	† TRWLSI	
		9000		x							x		x	x		THC1200	† TRWLSI	
12		85		x		x	x	x								ADC912B	† AD (3322)	15
				x		x	x	x								ADC912E	AD (3322)	
		135 *														PM7572A12	† AD	
																PM7572E12	AD	
		150		x	x								x	x		SP674	† Sipex-HSD	
		215		x									x	x		MX7572C12	Maxim	20
				x									x	x		MX7572L12	◊ Maxim	
				x									x	x		MX7572U12	† Maxim	
		720		x	x								x	x	x	ADC674A	† Adv Analog	
		1450		x	x					x	x		x	x		SP9415	† Sipex-HSD	
13		560				x	x						x	x	x	5210	† TeledyneC	25
		745		x										x	x	MN5213	MicroNet	
				x										x	x	MN5213H	† MicroNet	
							x							x	x	MN5214	MicroNet	
							x							x	x	MN5214H	† MicroNet	
							x							x	x	MN5215	MicroNet	
							x							x	x	MN5215H	† MicroNet	30
		913				x	x	x						x	x	MN5610	◊† MicroNet	
		915				x	x						x	x	x	MN5210	MicroNet	
						x	x						x	x	x	MN5210H	† MicroNet	
						x	x						x	x	x	MN5211	MicroNet	
						x	x						x	x	x	MN5211H	† MicroNet	35
						x	x						x	x	x	MN5212	MicroNet	
						x	x						x	x	x	MN5212H	† MicroNet	
						x	x						x	x	x	MN5216	MicroNet	
						x	x						x	x	x	MN5216H	† MicroNet	
						x	x						x			TP5211	TeledyneC	40
						x	x						x			TP5211-HR	† TeledyneC	
						x	x						x			TP5212	TeledyneC	
						x	x						x			TP5212-HR	† TeledyneC	
						x	x									TP5214	TeledyneC	
						x	x									TP5214-HR	† TeledyneC	45
						x	x									TP5215	TeledyneC	
						x	x									TP5215-HR	† TeledyneC	
						x	x						x			TP5216	TeledyneC	
						x	x						x			TP5216-HR	† TeledyneC	
						x	x									TP5217	TeledyneC	50
						x	x									TP5217-HR	† TeledyneC	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm 1/2$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	13	1000				x						x	x	x	AD5211B	AD	(Cont'd)
							x						x	x	x	AD5211T	† AD	
							x						x	x	x	AD5212B	AD	
							x						x	x	x	AD5212T	† AD	
							x							x	x	AD5214B	AD	5
							x							x	x	AD5214T	† AD	
							x							x	x	AD5215B	AD	
							x							x	x	AD5215T	AD	
							x						x	x	x	NE5211	Signetics	10
							x						x	x	x	NE5212	Signetics	
							x							x	x	NE5214	Signetics	
							x						x	x	x	SA5211	Signetics	
							x						x	x	x	SA5212	Signetics	
							x							x	x	SA5214	Signetics	
13.8		40		x							x			x		TMC1241	TRWLSI	15
				x							x			x		TMC12441	TRWLSI	
14		40		x		x	x	x			x			x	x	ADC1241B	National	
15				x	x		x	x					x	x	x	AD674S	† AD (3322)	20
				x	x		x	x					x	x	x	AD674T	† AD (3322)	
				x	x		x	x					x	x	x	AD674U	† AD (3322)	
		150		x			x						x			MAX674AK	Maxim	25
				x			x	x					x			MAX674AL	Maxim	
				x			x	x					x			MAX674AT	† Maxim	
				x			x	x					x			MAX674AV	† Maxim	
				x	x				x		x	x	x	x		HADC674Z	† Signal Proc	
		450		x	x								x	x		ADC674AK	Burr-Brown (3420)	30
				x	x								x	x		ADC674AT	† Burr-Brown (3420)	
				x			x	x						x		MN674AK	MicroNet	
				x			x	x						x		MN674AL	MicroNet	
				x			x	x						x		MN674AU	† MicroNet	
				x			x	x						x		MN674AU/B	† MicroNet	
		720		x	x								x	x		Hi674AKD-5	Harris	35
				x	x								x	x		Hi674AL	Harris	
				x	x								x	x		Hi674ATD-2	† Harris	
				x	x								x	x		Hi674ATD/883	† Harris	
		1095		x	x						x		x	x		MN6231K	MicroNet	40
				x	x							x	x	x		MN6231T	† MicroNet	
					x							x	x	x		MN6232K	MicroNet	
					x							x	x	x		MN6232T	† MicroNet	
17				x		x	x	x				x		x		SDA0812A	◊ Siemens	45
		10		x				x								ADC7802B	Burr-Brown (3420)	
		450 *			x		x						x		x	ADC804	Burr-Brown	
					x		x						x		x	ADC804S	† Burr-Brown (3420)	
20		3/4				x	x	x					x	x	x	ADCHX12BM	Datel	50
		20		x						x	x			x		SDA0812	Siemens	
		720		x	x								x	x		ADC574A	† Adv Analog	
		1100				x	x	x					x	x	x	ADCHX12BMC	Datel (3440)	
25		72		x	x								x	x		4188	† TeledyneC	
		100											x			ADS574	◊ Burr-Brown	
		150		x			x	x					x			MAX574AK	Maxim	

(Continued)

Bin.—Binary
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Par. Out—Parallel Output
Ser. Out—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	25	150	x			x	x					x			MAX574AL	Maxim	(Cont'd)
				x			x	x					x			MAX574AT	† Maxim	
				x			x	x					x			MAX574AU	† Maxim	
				x	x				x		x	x	x	x		HADC574Z	† Signal Proc	
		450 *		x	x								x	x		ADC574AK	Burr-Brown (3420)	5
				x	x								x	x		ADC574AS	† Burr-Brown (3420)	
		595			x	x	x	x					x	x	x	ADC80AG	Burr-Brown (3420)	
		705		x		x	x	x			x			x	x	ADC80MAH-12	Burr-Brown (3420)	
				x			x	x						x		ADC80-12	MicroNet	10
		720		x	x								x	x		HI574AKD-5	Harris	
				x	x								x	x		HI574ALD-5	Harris	
				x	x								x	x		HI574ATD-2	† Harris	
				x	x								x	x		HI574ATD/883	† Harris	
				x	x								x	x		MP574AK	MicroPwr	15
				x	x								x	x		MP574AL	MicroPwr	
				x	x								x	x		MP574AT	MicroPwr	
				x	x								x	x		MP574AU	MicroPwr	
				x	x								x	x		TP574AK	TeledyneC	20
				x	x								x	x		TP574AT	† TeledyneC	
				x	x								x	x		TP574AU	† TeledyneC	
		725		x	x								x		x	AD574AK	◊ AD (3322)	25
				x	x								x	x		MN574A	† MicroNet	
		800				x	x	x					x	x	x	ADADC80-12	AD	
						x	x	x					x	x	x	ADADC80Z-12	† AD	
		925		x	x			x					x	x	x	AD572A	AD (3322)	
				x	x			x					x	x	x	AD572B	AD (3322)	
		950				x	x	x					x	x	x	MNADC80	MicroNet	30
				x						x	x		x	x		MN7145K	MicroNet	
				x						x	x		x	x		MN7145T	† MicroNet	
				x						x	x		x	x		MN7145T/B	† MicroNet	
					x					x	x		x	x		MN7146K	MicroNet	
					x					x	x		x	x		MN7146T	† MicroNet	
					x					x	x		x	x		MN7146T/B	† MicroNet	
					x					x	x		x	x		MN7147K	MicroNet	
					x					x	x		x	x		MN7147T	† MicroNet	35
					x					x	x		x	x		MN7147T/B	† MicroNet	
		1095		x	x						x		x	x		MN6227K	MicroNet	40
				x	x						x		x	x		MN6227T	† MicroNet	
					x						x		x	x		MN6228K	MicroNet	
					x						x		x	x		MN6228T	† MicroNet	
		1300		x	x					x	x		x	x		HS9414	† Sipex-HSD	
27.5		300						x	x	x	x		x	x		ML2200BC	MicroLinear	45
								x	x		x			x		ML2230BC	MicroLinear	
30		20		x			x	x						x		ICL7112	† Harris	
		750		x	x								x	x		HS574AK	Sipex-HSD	
				x	x								x	x		HS574AL	Sipex-HSD	
				x	x								x	x		HS574ATB	† Sipex-HSD	
				x	x								x	x		HS574AUB	† Sipex-HSD	
		780		x	x								x		x	AD574AT	◊† AD (3322)	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	30	780	x	x								x		x	AD574K \diamond AD		5
				x									x		x	AD574L \diamond AD		
				x	x								x		x	AD574S \diamond \uparrow AD		
				x	x								x		x	AD574T \diamond \uparrow AD		
				x									x		x	AD574U \diamond \uparrow AD		
			800	x	x						x		x	x		HS9474K Sipex-HSD		10
				x	x						x		x	x		HS9474TB \uparrow Sipex-HSD		
			1100	x	x					x	x		x	x		HS9410K Sipex-HSD		
				x	x					x	x		x	x		HS9410TB \uparrow Sipex-HSD		
			1340	x	x					x	x		x	x		HS9408K Sipex-HSD		
				x	x					x	x		x	x		HS9408TB \uparrow Sipex-HSD		15
			1520	x	x					x	x		x	x		HS9404K Sipex-HSD		
				x	x					x	x		x	x		HS9404TB \uparrow Sipex-HSD		
50			725	x									x	x	x	AD5201B AD		
				x									x	x	x	AD5201T \uparrow AD		
				x									x	x	x	AD5202B AD		20
				x									x	x	x	AD5202T \uparrow AD		
				x										x	x	AD5204T \uparrow AD		
				x										x	x	AD5205B AD		
				x										x	x	AD5205T \uparrow AD		
				x										x	x	NE5204 \uparrow Signetics		25
				x										x	x	SA5204 \uparrow Signetics		
			745	x										x	x	MN5203 MicroNet		
				x										x	x	MN5203H \uparrow MicroNet		
							x							x	x	MN5204 MicroNet		
							x							x	x	MN5204H \uparrow MicroNet		30
							x							x	x	MN5205 MicroNet		
							x							x	x	MN5205H \uparrow MicroNet		
			915	x									x	x	x	MN5200 MicroNet		
				x									x	x	x	MN5200H \uparrow MicroNet		
							x						x	x	x	MN5201 MicroNet		35
							x						x	x	x	MN5201H \uparrow MicroNet		
							x						x	x	x	MN5202 MicroNet		
							x						x	x	x	MN5202H \uparrow MicroNet		
						x							x	x	x	MN5206 MicroNet		
						x							x	x	x	MN5206H \uparrow MicroNet		40
135 *																PM7572E05 AD		
175			80	x									x	x	x	MN5250 MicroNet		
				x									x	x	x	MN5250H \uparrow MicroNet		
							x						x	x	x	MN5251 MicroNet		
							x						x	x	x	MN5251H \uparrow MicroNet		45
							x						x	x	x	MN5252 MicroNet		
							x						x	x	x	MN5252H \uparrow MicroNet		
						x							x	x	x	MN5253 MicroNet		
						x							x	x	x	MN5253H \uparrow MicroNet		
							x						x	x		HS5251C Sipex-HSD		50
300			112	x	x			x					x	x	x	ADCHC12BC Datel		
				x	x			x					x	x	x	ADCHC12BM Datel		
500			750	x									x	x		SE5074 \uparrow Signetics		
5000			15	x										x		μ PD7002 NEC		
20000			20	x	x									x		4145 TeledyneC		50
24000			25	x								x		x		TSC8702 TeledyneC		
				x								x		x		TSC8705 TeledyneC		

(Cont'd)

INTERFACE

(Continued)

Bin.—Binary
Off.—Offset

Compl.—Complementary
Magn.—Magnitude

CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference

Mux. In.—Multiplexed Inputs
S&H—Sample and Hold

Par. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ±LSB	Conversion Time ±½LSB μs	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1/2	100000	20	x					x			x	x	x		ICL7109	Harris	(Cont'd)
				x					x			x	x	x		ICL7109	† Maxim	
				x								x	x	x	x	TSC7109BC	◊ TeledyneC	
				x					x			x	x	x	x	TSC7109C	◊ TeledyneC	
				x					x			x	x	x	x	TSC7109M	◊† TeledyneC	5
3/4		6100					x	x			x		x			ADC603J	Burr-Brown (3421)	
							x	x			x		x			ADC603R	† Burr-Brown (3421)	
		7000		x				x								ADC604J	Burr-Brown (3421)	
0.2		2500						x			x		x	x		ADS118MC	Datel (3440)	
								x			x		x	x		ADS118MM	† Datel (3440)	10
0.5		1900		x	x	x	x				x		x	x		ADS117MC	Datel (3440)	
				x	x	x	x				x		x	x		ADS117MM	† Datel (3440)	
1		1.3					x	x								ADS193C	Datel (3440)	
		1200		x	x	x	x	x					x	x		ADC11C	Datel	
				x	x	x	x	x					x	x		ADC511M	Datel (3440)	15
		1500		x	x	x	x				x		x	x		ADS112C	Datel (3440)	
				x	x	x	x				x		x	x		ADS112M	Datel (3440)	
1.5		2350 *			x	x							x	x	x	ADC803C	Burr-Brown (3421)	
2		1750		x	x	x	x	x			x		x	x		ADS111C	Datel	
				x	x	x	x	x			x		x	x		ADS111M	Datel (3440)	20
2.5		3000		x	x	x	x			x	x		x	x		HDAS524MC	Datel (3441)	
				x	x	x	x			x	x		x	x		HDAS524MM	† Datel (3441)	
				x	x	x	x			x	x		x	x		HDAS528MC	Datel (3441)	
				x	x	x	x			x	x		x	x		HDAS528MM	† Datel (3441)	
4.0		3000		x	x	x	x			x	x		x	x		HDAS534M	Datel (3441)	25
				x	x	x	x			x	x		x	x		HDAS534MC	Datel (3441)	
				x	x	x	x			x	x		x	x		HDAS538C	Datel (3441)	
				x	x	x	x			x	x		x	x		HDAS538M	Datel (3441)	
8		1500				x	x	x								ADC-HZ12B	Datel	
		2000				x	x	x					x	x	x	ADCHZ12BM	Datel	30
						x	x	x					x	x	x	ADCHZ12BMC	Datel (3440)	
9		2150				x	x				x		x	x	x	ADCHS12BC	Datel	
						x	x				x		x	x	x	ADCHS12BM	Datel	
13.3		700		x	x					x	x		x	x		HDAS75MC	Datel (3441)	
				x	x					x	x		x	x		HDAS75MM	† Datel (3441)	35
20		1450		x	x					x	x		x	x		HDAS16/883B	† Datel (3441)	
				x	x					x	x		x	x		HDAS8/883B	† Datel (3441)	
		1500				x	x	x								ADC-HX12B	Datel	
		2000				x	x	x					x	x	x	ADCHX12BC	Datel	
200		210		x										x	x	ADC1210	† National	40
				x										x	x	ADC1210C	National	
350		2100		x				x								ADC530M	Datel (3440)	
1/2		0.625	700	x						x	x			x		CAT5412	Catalyst Semi	
		1	850	x	x						x			x		S5412	◊† Gould AMI	
		7.2	250	x	x						x			x	x	S5012	◊† Gould AMI	45
0.5		7	730	x	x								x	x		HI7740D-5	◊† Harris	
				x	x								x	x		HI774T/883	◊† Harris	
				x	x								x	x		HI774TD-5	† Harris	
				x	x								x	x		HI774U/883	◊† Harris	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res	Linear-ity Error \pm LSB	Conversion Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	0.5	7730	x	x									x	x		HI774LD-5	Harris	(Cont'd)
		15	720	x	x								x	x		HI674ALD-5	Harris	
				x	x								x	x		HI674ATE/883	† Harris	
				x	x								x	x		HI674AUD/883	Harris	
		17	15	x						4			x	x		ADC7802	◊ Burr-Brown	5
		25	720	x	x								x	x		HI574ATE/883	◊† Harris	
				x	x								x	x		HI574AUD-2	† Harris	
				x	x								x	x		HI574AUD/883	† Harris	
				x	x								x	x		HI574AUE/883	◊† Harris	
		47	730	x	x								x	x		HI774KD-5	Harris	10
1		6100					x	x			x		x			ADC603K	Burr-Brown (3421)	
							x	x			x		x			ADC603S	† Burr-Brown (3421)	
		7000	x					x								ADC604K	Burr-Brown (3421)	
	0.1			x									x			AD9005	AD	15
		4.1			x			x			x		x	x		CLC922B	† Comlinear	
		6		x				x			x		x	x		CLC925	‡ Comlinear	
				x				x			x		x	x		CLC926	‡ Comlinear	
		3500	x								x		x	x		SP9560	† Sipex-HSD	
		5500	x	x			x	x			x					ADC00110	† ILC-DDC	20
			x	x			x	x			x					ADC00111	† ILC-DDC	
		6100						x			x		x	x		ADC603	Burr-Brown	
								x			x		x	x		ADC603SH	† Burr-Brown (3421)	
	0.2		x													CAV1205	AD	
		4.2*	x	x	x	x					x					ADS131C	Datel (3440)	25
		6100						x			x		x	x		ADC604	Burr-Brown	
	0.4	1095	x	x							x		x	x		MN6231S	† MicroNet	
		2560*		x							x		x	x		MN5249	MicroNet	
				x							x		x	x		MN5249H	† MicroNet	
	0.5		x					x								AD671	AD	30
			x													AD671-500	AD (3322)	
		4.9		x			x	x			x		x	x		CLC936	◊† Comlinear	
		2100	x	x									x	x		4193	† TeledyneC	
			x	x									x	x		4195	† TeledyneC	
		3150				x	x	x			x		x	x		4199	† TeledyneC	
		3558					x	x			x		x	x		MN6249	† MicroNet	35
		4300	x	x			x	x	x		x	x			x	ADC00300	† ILC-DDC	
	0.6	4.9		x			x	x			x		x	x		CLC935	◊† Comlinear	
	0.75		x													AD671-750	AD (3322)	
	0.8	3150				x	x	x			x		x	x		4198	† TeledyneC	40
1			x													AD7586	AD (3322)	
			x													AD7886	AD (3319)	
		1700			x	x								x		ADC601	Burr-Brown	
					x	x							x	x	x	ADC601J	Burr-Brown (3421)	
	1.5	3050				x	x	x					x	x	x	ADC00403-103	† ILC-DDC	45
						x	x	x					x	x	x	ADC00403-203	ILC-DDC	

(Continued)

Bin.—Binary
Off.—Offset

Compl.—Complementary
Magn.—Magnitude

CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference

Mux. In—Multiplexed Inputs
S&H—Sample and Hold

Par. Out—Parallel Output
Ser. Out—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time \pm 1/2 LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1	1.5	3050			x	x	x					x	x	x	ADC00404-103 † ILC-DDC	(Cont'd)	
						x	x	x					x	x	x	ADC00404-203 ILC-DDC		
	2	2200		x	x			x					x	x	x	ADC817AM Datel		
		2700		x	x			x					x	x	x	ADH8516-11 ILC-DDC		
	2.5	3275		x	x								x	x	x	4133 TeledyneC		5
	3			x											x	ADC7573 AD		
				x												ADC922 AD		
				x				x								AD7572A AD (3322)		
		215		x		x	x	x			x		x			ADS7800J Burr-Brown (3420)		
				x									x	x		MAX162BC ◊ Maxim		10
				x									x	x		MAX162BI Maxim		
				x									x	x		MAX162BM † Maxim		
				x									x	x		MAX162CC ◊ Maxim		
				x									x	x		MAX162CI Maxim		
				x									x	x		MAX162CM † Maxim		15
	3.125	155		x	x									x		MAX183B ◊† Maxim		
		179		x	x									x		MX7672K ◊† Maxim		
	3.5	3275		x	x			x					x	x	x	4132 TeledyneC		
	4			x									x			AD1678 AD		
				x									x			AD678 AD (3320)		20
	5	100 *											x			AD7572J AD (3322)		
													x			AD7572S † AD		
		135 *														PM7572FS05 ◊ AD		
																PM7572F05 AD		
		155		x	x									x		MAX184B ◊† Maxim		25
		179		x	x									x		MX7672L ◊† Maxim		
		215		x									x		x	MAX170B ◊† Maxim		
				x									x	x		MX7572A05 Maxim		
				x									x	x		MX7572B05 Maxim		
				x									x	x		MX7572J05 ◊ Maxim		30
				x									x	x		MX7572K05 ◊ Maxim		
				x									x	x		MX7572S05 † Maxim		
				x									x	x		MX7572T05 † Maxim		
	5.68	265		x			x	x					x		x	MAX171BC Maxim		
	7			x									x			AD1341 AD (3320, 3325, 3350)		35
													x	x		HI1-774J-5 Harris		
													x	x		HI1-774T-2 Harris		
													x	x		HI1-774S-2 Harris		
		215		x							x		x	x		MAX163B ◊† Maxim		
				x							x		x	x		MAX164B ◊† Maxim		40
				x							x		x	x		MAX167B ◊† Maxim		
		730		x	x								x	x		HI774JD-5 Harris		
				x	x								x	x		HI774S/883 ◊† Harris		
				x	x								x	x		HI774SD-5 † Harris		
	7.5			x									x			AD7874 AD (3320, 3325)		45
		25		x	x						x		x	x	x	MAX190B ◊† Maxim		
	8			x									x			AD7870 AD (3320)		
				x									x			AD7878 AD (3320)		
		150		x			x	x					x			MAX174CC Maxim ~		
				x			x	x					x			MAX174CM † Maxim		50

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res	Linear-ity Error \pm LSB	Conversion Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1	8	450	x			x	x						x		MN774AJ	MicroNet	5
				x			x	x						x		MN774AS	† MicroNet	
				x			x	x						x		MN774AS/B	† MicroNet	
				x			x	x						x		MN774AT	† MicroNet	
				x			x	x						x		MN774AT/B	† MicroNet	
		8.125	155	x	x					x	x		x	x		MAX180B/C	◊† Maxim	5
				x	x					x	x		x	x		MAX181B/C	◊† Maxim	
		8.33	180	x				x			x					MAX177C	Maxim	10
				x				x			x					MAX177M	Maxim	
		8.5	450	x	x								x	x		ADC774JH	Burr-Brown (3420)	10
													x	x		ADC774JP	Burr-Brown (3420)	
													x	x		ADC774SH	† Burr-Brown (3420)	15
9		350		x										x		MP774J	◊ MicroPwr	
				x						x				x		MP774S	† MicroPwr	15
10				x									x			ADADC85	AD (3322)	
				x									x			AD1674	AD (3320)	20
				x									x			AD7772	AD	
											x		x	x		MN6233	† MicroNet	20
				x										x		MN6774	MicroNet	
		155		x	x									x		MAX185B	◊† Maxim	25
		215		x									x	x		MAX172B	◊† Maxim	
		600		x				x					x	x		AM6112	AMD	25
		660			x						x		x	x		ADS807J	Burr-Brown (3420)	
					x						x		x	x		ADS808J	Burr-Brown (3420)	25
12				x												AD7880	AD (3321)	
		85		x		x	x	x								ADC912F	AD (3322)	30
				x		x	x	x								ADC912H	AD (3322)	
		135 *														PM7572FS12	◊ AD	30
																PM7572F12	AD	
		215		x									x	x		MX7572A12	Maxim	35
				x									x	x		MX7572B12	Maxim	
				x									x	x		MX7572J12	◊ Maxim	35
				x									x	x		MX7572K12	◊ Maxim	
				x									x	x		MX7572S12	† Maxim	35
				x									x	x		MX7572T12	† Maxim	
12.5		15		x										x		SPT7572	Signal Proc	40
13				x									x			AD5210	AD (3322)	
				x									x			NE5210	Signetics	40
14		40		x		x	x	x			x			x	x	ADC1241C	National	
				x		x	x	x			x			x	x	ADC1241CM	† National	45
15				x									x			AD1334	AD (3321, 3325, 3350)	
				x									x			AD674A	AD (3322)	45
		15		x				x						x		CA3312	Harris	
				x				x						x		CA3312A	Harris	45
		150		x			x	x					x			MAX674AJ	Maxim	
				x			x	x					x			MAX674AS	† Maxim	45
		450		x	x								x	x		ADC674AJ	Burr-Brown (3420)	

Bin.—Binary
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Compl.—Complementary
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Int. Ref.—Internal Reference
Mux. In.—Multiplexed Inputs
S&H—Sample and Hold
Par. Out—Parallel Output
Ser. Out—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time \pm 1/2 LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1	15	450	x	x								x	x		ADC674AS \dagger Burr-Brown (3420)		
				x			x	x						x		MN674AJ MicroNet		
				x			x	x						x		MN674AS \dagger MicroNet		
				x			x	x						x		MN674AS/B \dagger MicroNet		
				x			x	x						x		MN674AT \dagger MicroNet		5
				x			x	x						x		MN674AT/B \dagger MicroNet		
		720		x	x								x	x		HI674AJD-5 Harris		
				x	x								x	x		HI674ASD-2 \dagger Harris		
				x	x								x	x		HI674ASD/883 \dagger Harris		
				x	x								x	x		HI674ASE/883 $\diamond\dagger$ Harris		10
		750		x	x						x		x	x		SP9472DAS \dagger Sipex-HSD		
				x	x					8	x		x	x		SP9473DAS \dagger Sipex-HSD		
		1095		x	x						x		x	x		MN6231J MicroNet		
					x						x		x	x		MN6232J MicroNet		
					x						x		x	x		MN6232S \dagger MicroNet		15
20	66			x	x					x	x					DAS862 $\diamond\dagger$ Adv Analog		
25	150			x			x	x					x			MAX574AJ Maxim		
				x			x	x					x			MAX574AS \dagger Maxim		
		450		x	x								x	x		ADC574AJ Burr-Brown (3420)		
				x	x								x	x		ADC574AT \dagger Burr-Brown (3420)		20
		720		x	x								x	x		HI574AJD-5 Harris		
				x	x								x	x		HI574ASD-2 \dagger Harris		
				x	x								x	x		HI574ASD/883 \dagger Harris		
				x	x								x	x		HI574ASE/883 $\diamond\dagger$ Harris		
				x	x								x	x		MP574AJ MicroPwr		25
				x	x								x	x		MP574AS MicroPwr		
				x	x								x	x		TP574AJ TeledyneC		
				x	x								x	x		TP574AS \dagger TeledyneC		
		725		x	x								x			AD574AJ \diamond AD (3322)		
				x	x								x			AD574AS $\diamond\dagger$ AD (3322)		30
		750		x	x					16	x		x	x		SP9462DAS \dagger Sipex-HSD		
				x	x					8	x		x	x		SP9463DAS \dagger Sipex-HSD		
		950		x						x	x		x	x		MN7145J MicroNet		
				x						x	x		x	x		MN7145S \dagger MicroNet		
				x						x	x		x	x		MN7145S/B \dagger MicroNet		35
					x					x	x		x	x		MN7146J MicroNet		
					x					x	x		x	x		MN7146S \dagger MicroNet		
					x					x	x		x	x		MN7146S/B \dagger MicroNet		
					x					x	x		x	x		MN7147J MicroNet		
					x					x	x		x	x		MN7147S \dagger MicroNet		40
					x					x	x		x	x		MN7147S/B \dagger MicroNet		
		1095		x	x					x			x	x		MN6227J MicroNet		
				x	x					x			x	x		MN6227S \dagger MicroNet		
					x					x			x	x		MN6228J MicroNet		
					x					x			x	x		MN6228S \dagger MicroNet		45
27.5	300							x	x	x	x		x	x		ML2200CC MicroLinear		
								x	x					x		ML2230CC MicroLinear		
								x	x					x		ML2233CC MicroLinear		

 \dagger Mil Temp Range (-55° to 125°C) \ddagger High Rad Resistance

*Typical Value

*Behavioral Model Available

 \diamond Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

(Continued)

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm 1/2$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integ-ating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12	1	30		x									x			ADADC80	AD	(Cont'd)
		750		x	x								x	x		HS574AJ	Sipex-HSD	
				x	x								x	x		HS574ASB	† Sipex-HSD	
		780		x	x								x		x	AD574J	◊ AD	
		800		x	x						x		x	x		HS9474J	Sipex-HSD	5
				x	x						x		x	x		HS9474S	† Sipex-HSD	
				x	x						x		x	x		HS9474SB	† Sipex-HSD	
				x	x						x		x	x		HS9474T	† Sipex-HSD	
		1100		x	x					x	x		x	x		HS9410J	Sipex-HSD	10
				x	x					x	x		x	x		HS9410SB	† Sipex-HSD	
		1340		x	x					x	x		x	x		HS9408J	Sipex-HSD	
				x	x					x	x		x	x		HS9408SB	† Sipex-HSD	
		1520		x	x					x	x		x	x		HS9404J	Sipex-HSD	
				x	x					x	x		x	x		HS9404SB	† Sipex-HSD	
		35		x									x			AD574A	AD	15
		40		x				x								AD363R	AD	
		45												x		μPD650D	NEC	
		50		x				x								AD364R	AD (3350)	
				x									x			AD5200	AD (3322)	
		725		x										x	x	AD5204B	AD	20
		60	195	x									x	x		MAX178A	◊† Maxim	
				x										x		MAX178B	◊† Maxim	
				x						x	x		x	x		MAX182A	◊ Maxim	
				x						x	x			x		MX182B	◊† Maxim	
		100											x			AD7578K	AD (3322)	25
													x			AD7578T	† AD (3322)	
		150		x										x		MX7578	◊† Maxim	
		175	80				x						x	x		HS5251B	† Sipex-HSD	
1/2	7.2	250		x	x						x			12	x	CS5012A	† Crystal	
1.25		400		x				x			x		x			ADS602K	Burr-Brown (3421)	30
	0.1	8500					x	x			x		x	x		ADC600	Burr-Brown	
	1	2300				x	x				x		x	x		ADS602	Burr-Brown	
1.5		400		x				x			x		x			ADS602J	Burr-Brown (3421)	
2	0.1	4.3 *			x		x				x					ADS130M	Datel (3440)	
	0.2	4.2 *		x	x	x	x				x					ADS131M	Datel (3440)	35
	200	210		x										x	x	ADC1211	† National	
				x										x	x	ADC1211C	National	
4	10	450 *				x	x	x					x	x	x	ADC84K-10	Burr-Brown (3420)	
12 Plus Sign																		
—	160 ms	—		x												AD7552	AD	
1/2	100 *	15 *						x						x		ADC1205BC	National	40
								x						x		ADC1205BC-1	National	
								x						x		ADC1225BC	National	
								x						x		ADC1225BC-1	National	
1	100 *	15 *						x						x		ADC1205CC	National	45
								x						x		ADC1205CC-1	National	
								x						x		ADC1225CC	National	
								x						x		ADC1225CC-1	National	
12 (2 device set)																		
1/2	15	785		x									x	x	x	HS5210B	† Sipex-HSD	
				x									x	x	x	HS5210C	Sipex-HSD	
				x									x	x	x	HS5211B	† Sipex-HSD	50

INTERFACE

Bin.—Binary
Off.—Offset

Compl.—Complementary
Magn.—Magnitude

CTC—Compl. 2's Compl.
Int. Ref.—Internal Reference

Mux. In.—Multiplexed Inputs
S&H—Sample and Hold

Par. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error	Conversion Time $\pm 1/2$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
12 (2 device set)	1/2	15	785															(Cont'd)
				x									x	x	x	HS5211C	Sipex-HSD	
				x									x	x	x	HS5212B	† Sipex-HSD	
				x									x	x	x	HS5212C	Sipex-HSD	
				x										x	x	HS5213B	† Sipex-HSD	
				x										x	x	HS5213C	Sipex-HSD	5
				x										x	x	HS5214B	† Sipex-HSD	
				x										x	x	HS5214C	Sipex-HSD	
				x										x	x	HS5215B	† Sipex-HSD	
				x										x	x	HS5215C	Sipex-HSD	
				x									x	x	x	HS5216B	† Sipex-HSD	10
				x									x	x	x	HS5216C	Sipex-HSD	
		250000	360	x					x				x	x	x	ICL8052A	Harris	
12 (3-Digit BCD)	1	6000 *	50										x	x		AD2020	AD	
13	1/2	40000 *	64					x						x		MP7550B	MicroPwr	
		72						x					x		x	AD7550B	AD	15
13 (D/A, A/D)	1/2	30		x												MC145402	Motorola	
14		260		x									x		x	TLC32040M	† TI	
				x									x		x	TLC32044M	† TI	
1/2	2	2900		x	x	x	x	x			x		x	x		ADS928C	Datel (3440)	20
1/2	—	—		x	x								x		x	TDA1534	Signetics	
		2735		x	x			x		x	x		x	x		DAS5714	Adv Analog	
1	2700			x	x			x					x	x		ADC908C	Datel (3440)	
				x	x			x					x	x		ADC908M	Datel (3440)	
2	2900			x	x	x	x	x			x		x	x		ADS928M	Datel (3440)	25
7	2000			x				x					x	x		MP2734	Analogic	
8											x					HAS1409	AD	
10	2400			x				x					x	x	x	ADC2714	Adv Analog	
	3000			x	x			x					x	x	x	MP8014	Analogic	
14	250			x				x								S5014-K14	Gould AMI	30
14.25	250			x	x						x		x	x		ADC3201	Analogic	
				x	x						x		x	x		ADC3202	Analogic	
				x	x						x			x	x	CS5014	Crystal	
28	250			x				x								S5014-K28	Gould AMI	
40				x										x		ICL7115	Harris	
250	300						x						x	x	x	MN5260	MicroNet	35
3/4	0.5	4.1		x	x			x			x		x	x		ADC3110	Analogic	
		1900		x	x	x	x	x			x		x	x		ADS942MC	Datel (3440)	
				x	x	x	x	x			x		x	x		ADS942MM	† Datel (3440)	
1.0	3300			x	x	x	x				x		x	x		ADS941MC	Datel (3440)	
				x	x	x	x				x		x	x		ADS941MM	† Datel (3440)	40
1/2	14.25	250		x	x						x			x	x	S5014	† Gould AMI	
3/4	1	2600			x						x		x	x		ADC3214	Analogic	
0.5	44	900		x	x			x			x		x	x		ADAM824B	Analogic	
				x	x			x			x		x	x		ADAM834B	Analogic	
1	0.1			x									x			AD9014	AD (3319)	45
	0.2	6100						x			x		x	x		ADC614	Burr-Brown (3421)	
	2	3000		x							x		x	x		SP9478	† Sipex-HSD	
				x									x	x		SP9588	† Sipex-HSD	
2.4	925			x	x									x		ADC914C	Datel (3440)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Conversion Time ± ½LSB μS	Power Dis. (max.) mW	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output (Cont'd)																		
14	1	2.4	925	x	x									x		ADC914M	Datel (3440)	(Cont'd)
			1800	x	x		x	x						x		ADS924C	Datel (3440)	
				x	x		x	x						x		ADS924M	Datel (3440)	
		10		x									x			AD1679	AD	
				x				x								AD1779	AD	5
				x				x					x			AD679	AD (3321)	
				x				x								AD779	AD (3321)	
				x									x			AD7871	AD (3321)	
				x				x								AD7872	AD (3321)	
		12		x									x			ADC1131	AD	10
		25		x									x			ADC1130	AD	
		40		x									x			DAS1152	AD (3321, 3350)	
		55		x									x			DAS1157	AD (3321, 3350)	
14 (2 device set)	1/2	250 ms	40	x					x			x	x	x		ICL7104-14	Harris	
14 (3 1/2-Digit BCD)	1/2	10 ms	20											x		4146	TeledyneC	15
15	1/4	5	1675				x						x	x		MP2735A-2	Analogic	
			1975				x				x		x	x		MP2735A-1	Analogic	
	1/2	6.8	1750				x				x		x	x		ADC2735	Adv Analog	
		15	3000	x	x			x					x	x	x	MP8015	Analogic	20
		25 ms	20	x								x		x		TSC850	TeledyneC	
		33 ms	20	x						x		x	x	x		TSC804	TeledyneC	
	0.5	50	900	x	x			x			x		x	x		ADAM825B	Analogic	
				x	x			x			x		x	x		ADAM835B	Analogic	
	1	50		x									x			DAS1153	AD (3321, 3350)	25
		55		x									x			DAS1158	AD (3321, 3350)	
	2	400 ms	20	x					x						x	TSC800C	TeledyneC	
16	1/4	1.5	2800	x	x			x					x	x		AB3XX16	Analogic	
			3925	x	x			x			x		x	x		AB4XX16	Analogic	
		1.8	4300	x	x			x			x		x	x		AB40216	Analogic	
				x	x			x			x		x	x		AB40316	Analogic	30
				x	x			x			x		x	x		ADAM-846	Analogic	
		5	1675				x						x	x		AM30516	Analogic	
			1975				x				x		x	x		AM40516	Analogic	
	1/2		2735	x	x			x		x	x		x	x		DAS5716	Adv Analog	
	2				x		x			x	x			x		ADC-1600-2	Adv Analog	35
				x	x	x										ADC1600-2	Adv Analog	
	8.1	300		x	x			x		x	x				x	CS5126	† Crystal	
	10	1400 *		x						x				x		HS9588	Sipex-HSD	
	15	1400		x	x					x	x		x	x		SP9488	† Sipex-HSD	
		1520				x	x	x			x		x	x		HS9476	† Sipex-HSD	40
	16	1500				x	x				x		x	x	x	MN6295K	MicroNet	
						x	x				x		x	x	x	MN6295T	† MicroNet	
						x	x				x		x	x	x	MN6295T/B	† MicroNet	
							x				x		x	x	x	MN6296K	MicroNet	45
							x				x		x	x	x	MN6296T	† MicroNet	
							x				x		x	x	x	MN6296T/B	† MicroNet	
		3000		x	x			x					x	x	x	A8016-16	Adv Analog	
	16.25	250		x	x						x			x	x	CS5016	Crystal	
	17	250		x	x						x		x	x		ADC4201	Analogic	50
				x	x						x		x	x		ADC4202	Analogic	
				x	x						x		x	x		ADC4203	Analogic	

Bin.—Binary
Off.—OffsetCompl.—Complementary
Magn.—MagnitudeCTC—Compl. 2's Compl.
Int. Ref.—Internal ReferenceMux. In.—Multiplexed Inputs
S&H—Sample and HoldPar. Out.—Parallel Output
Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
16	1/2																	(Cont'd)
		20	450					x		x	x		x		x	CS5327	Crystal	
			3000	x	x			x					x	x	x	A8016	Adv Analog	
		32	3000	x	x			x					x	x	x	MP8016	Analogic	
		50	1000					x	x				x	x	x	ADC71A	Burr-Brown	
								x	x				x	x	x	ADC71B	Burr-Brown	5
		100	1200	x	x			x						x		HS9516-4	Sipex-HSD	
				x				x					x	x		HS9516B-6	† Sipex-HSD	
				x				x					x	x		HS9516C-6	Sipex-HSD	
	3/4	1.5	4000	x	x			x			x		x	x		AB40416	Analogic	
				x	x			x			x		x	x		AB40516	Analogic	10
				x	x			x			x		x	x		AM40016	Analogic	
				x	x			x			x		x	x		AM40116	Analogic	
		2.5	2.6	x	x			x			x		x	x		ADC4342	Analogic	
				x	x			x			x		x	x		ADC4346	Analogic	
		65	900					x			x		x	x		ADC4110	Analogic	15
								x			x		x	x		ADC4111	Analogic	
	3/4	1	3400	x	x						x		x	x		ADC4344	Analogic	
	0.5	2	2450	x	x			x			x		x	x		ADC4340	Analogic	
	0.75	1.5	2800	x	x			x					x	x		ADAM826-3	Analogic	
			3200	x	x			x					x	x		ADAM826-2	Analogic	20
			3900	x	x			x			x		x	x		ADAM826-1	Analogic	
			4000		x			x			x		x	x		AM41016	Analogic	
					x			x			x		x	x		AM41116	Analogic	
					x			x			x		x	x		AM41216	Analogic	
		3	2450	x	x			x			x		x	x		AM40316	Analogic	25
	1		400		x			x			x		X		x	CS5349	◊ Crystal	
			450					x		x	x		x		x	CS5326	Crystal	
		0.25	740	x				x	x		x					MN6400J	MicroNet	
				x				x	x		x					MN6400K	MicroNet	
				x				x	x		x					MN6400S	MicroNet	30
				x				x	x		x					MN6400T	MicroNet	
	1*	1.5	950										x			ADC701K	Burr-Brown	
																	(3421)	
	1	1.5	2300	x	x								x			ADC701	Burr-Brown	
		3		x				x					x			AD7701	AD	(3324)
		5	700								x				x	ZPP1001	Burr-Brown	35
		6	3000	x	x						x		x	x		SP9490	† Sipex-HSD	
		8	350		x			x		x	x				x	CS5101	◊† Crystal	
		10		x									x			AD1377	AD	(3323)
				x												AD1876	AD	(3321)
		16	1500			x	x				x		x	x	x	MN6295J	MicroNet	40
						x	x				x		x	x	x	MN6295S	† MicroNet	
						x	x				x		x	x	x	MN6295S/B	† MicroNet	
							x				x		x	x	x	MN6296J	MicroNet	
							x				x		x	x	x	MN6296S	† MicroNet	
							x				x		x	x	x	MN6296S/B	† MicroNet	45
		16.25	250	x	x						x			x	x	S5016	◊† Gould AMI	
		17		x									x			AD1378	AD	(3323)
	1*	17	1550			x	x	x					x	x	x	PCM75K	Burr-Brown	(3421)
																	(3421)	
	1	20		x									x			AD1380	AD	(3321)
			940	x	x						x		x	x	x	ADC4300	Analogic	50
		35		x									x			ADC1140	AD	(3323)

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time $\pm 1/2$ LSB μ S	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output (Cont'd)																		
16	1	50		x									x			ADADC71	AD	(Cont'd)
				x		x	x	x						x	x	ADADC71K	AD	(3323)
				x									x			ADADC72	AD	
				x		x	x	x						x	x	ADADC72K	AD	(3323)
		200 *		x	x									x		CS5317	Crystal	5
		300		x			x	x								MN5285	MicroNet	
				x			x	x								MN5286	MicroNet	
				x			x	x								MN5287	MicroNet	
		55			x								x			DAS1159	AD (3321, 3350)	10
		70		x									x			ADC1143	AD	
		80	40		x			x		x	x				x	CS5102	o† Crystal	
		100	1200	x	x			x						x		HS9516-5	Sipex-HSD	
				x				x					x	x		HS9516B-5	† Sipex-HSD	
				x				x					x	x		HS9516C-5	Sipex-HSD	
		250	40	x	x						x	x			x	CS5501	o† Crystal	15
		50000	1.5/4	x						x		x	x		x	CS5507	o† Crystal	
11/2	2.0	2400		x	x	x	x	x			x		x	x		ADS930MC	Datel (3440)	
				x	x	x	x	x			x		x	x		ADS930MM	† Datel (3440)	
2	1.5	950											x			ADC701J	Burr-Brown (3421)	20
	2			x									x			AD1382	AD (3321)	
	5	20		x		x		x							x	PCM78P	Burr-Brown	
	9	560						x				x	x		x	CX20018	Sony	
	14	645		x	x	x	x	x					x	x	x	AD1376	AD (3323)	
	15	645 *		x			x	x					x	x	x	ADC700	Burr-Brown (3420)	25
	16	250		x				x								S5016-J16	Gould AMI	
				x				x								S5016-K16	Gould AMI	
	17	525 *				x	x						x	x	x	ADC76K	Burr-Brown (3420)	
2 *	17	525 *				x	x	x					x	x	x	PCM75J	Burr-Brown (3421)	
2	17	1000		x		x	x	x					x	x	x	HS9576K	Sipex-HSD	30
				x		x	x	x					x	x	x	HS9576T/B	Sipex-HSD	
		1200		x	x								x	x	x	MN5295	MicroNet	
				x	x								x	x	x	MN5295H	† MicroNet	
				x	x								x	x	x	MN5296	MicroNet	
				x	x								x	x	x	MN5296H	† MicroNet	
	32	250		x				x								S5016-J32	Gould AMI	35
				x				x								S5016-K32	Gould AMI	
	35	1600		x	x			x					x			ADC1140	Adv Analog	
	40	1000				x	x	x					x	x	x	MN5290	† MicroNet	40
						x	x	x					x	x	x	MN5291	† MicroNet	
		1500		x	x						x		x	x	x	MN6290K	MicroNet	
				x	x						x		x	x	x	MN6290T	† MicroNet	
					x						x		x	x	x	MN6291K	MicroNet	
					x						x		x	x	x	MN6291T	† MicroNet	
	50			x		x	x	x						x	x	ADADC71J	AD (3323)	45
				x		x	x	x						x	x	ADADC72J	AD (3323)	
		525 *				x	x	x					x	x	x	ADC71K	Burr-Brown (3420)	
	60	200				x	x	x					x	x	x	MN5284	MicroNet	
	100	1200		x	x			x						x		HS9516-6	Sipex-HSD	
				x				x					x	x		HS9516B-4	† Sipex-HSD	
				x				x					x	x		HS9516C-4	Sipex-HSD	50

Bin.—Binary Off.—Offset Compl.—Complementary Magn.—Magnitude CTC—Compl. 2's Compl. Int. Ref.—Internal Reference Mux. In.—Multiplexed Inputs S&H—Sample and Hold Par. Out.—Parallel Output Ser. Out.—Serial Output

INTERFACE—Analog to Digital Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Conversion Time μ s	Power Dis. mW (max.)	Bin. Output	Off. Bin. Output	Compl. Bin. Output	Compl. Off. Bin. Output	CTC or 2's Compl. Output	Sign. Magn. Output	Mux. In.	S&H	Integrating	Int. Ref.	Par. Out	Ser. Out	Device	Source	Line
Binary Output																		(Cont'd)
16	2	5000		x	x					4					x	CS5505	† Crystal	(Cont'd)
		80000	30		x			x			x	x			x	CS5516	◊ Crystal	
	4	10	160													LC7886	◊ Sanyo	
		15		x									x	x	x	AD376J	AD	
		17	525 *			x	x						x	x	x	ADC76J	Burr-Brown (3420)	5
		1000		x		x	x	x					x	x	x	HS9576J	Sipex-HSD	
				x		x	x	x					x	x	x	HS9576S/B	† Sipex-HSD	
	40	1500		x	x					x			x	x	x	MN6290J	MicroNet	
				x	x					x			x	x	x	MN6290S	† MicroNet	10
					x					x			x	x	x	MN6291J	MicroNet	
					x					x			x	x	x	MN6291S	† MicroNet	
	50	525 *				x	x	x					x	x	x	ADC71J	Burr-Brown (3420)	
		1440				x	x	x					x	x	x	MN5282	MicroNet	
		100	1440			x	x	x					x	x	x	MN5280	MicroNet	
	12	20		x						x			x	x		MB87020	◊ Fujitsu	15
16 (2 device set)	1/2	250000	40	x					x			x	x	x		ICL7104-16	Harris	
17	1/16	3333	600		x			x	x			x	x	x		AH30217	Analogic	
	1/2	400	1550						x			x	x	x		MP8037	Analogic	
18	1/2	20	450					x		x	x		x		x	CS5329	Crystal	
	3/4	5	2	x	x	x	x	x		x			x	x		ADC5030	Analogic	20
		6.9	2	x	x	x	x	x		x			x	x		ADC5020	Analogic	
	1	10		x				x								AD1330	AD	
	2	20	450					x		x	x		x		x	CS5328	Crystal	
		63000	1					x				x			x	MAX132	◊† Maxim	
								x				x		x		MAX135	◊† Maxim	25
18 (dual)	2	5		x				x							x	PCM1750	Burr-Brown (3421)	
20	1	20	2380					x			x		x	x	x	ADC5120	Analogic	
		50000	1.5/4	x						x		x	x	x	x	CS5506	◊† Crystal	
				x						1		x	x		x	CS5506	◊† Crystal	
				x						x		x	x	x	x	CS5508	◊† Crystal	30
	2			X												AD7703	AD (3324)	
	4	25			x						x				x	CS5503	◊† Crystal	
		80000	30		x			x			x	x			x	CS5520	◊ Crystal	
20 Floating Point	512	3														MN5420	MicroNet	
22	1/2	50 ms		x								x	x	x		AD1175	AD	35
	2	320	330	x	x											ADC100	Thaler	
				x	x											ADC100M	† Thaler	
	6				x							x		x		ADC100C	Thaler	
24		250	80					x							x	CS5322	Crystal	
								x							x	CS5323	Crystal	40
		1000	180					x								CS5324	Crystal	
	1	1000000	500	x						x		x	X		X	ADC5041	Analogic	
	4	1000000	500	x						x		x	x	x		ADC5042	Analogic	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE

INTERFACE—Analog to Digital Converters (Cont'd)

Digits	Device	Source	Line	Digits	Device	Source	Line
Decimal Output				(Cont'd)			
LCD Bargraph Output, 2.5% Resolution	TSC826	TeledyneC	5	3 1/2 Digits, Integrating	TSC7136AC	TeledyneC	60
Dual Slope, Integrating, Analog Subsystem	TSC500	TeledyneC			TSC7136AC/BI	TeledyneC	
2- 1/2 Digits, LCD Drive	TSC806	TeledyneC			TSC7136C	TeledyneC	
	TSC807	TeledyneC			TSC810C	TeledyneC	
3 1/2 Digit LCD Display Driver	NJU9201B	NJR	TSC810C/BI		TeledyneC		
	NJU9203B	NJR	TSC811C		TeledyneC		
3 1/2 Digit LED Display Driver	NJU9202B	NJR	TSC811C/BI		TeledyneC		
	NJU9204B	NJR	TSC816C	TeledyneC			
3 1/2 Digit Multimeter LSI	NJU9207	NJR	10	3 1/2 Digits, Integrating, LCD Drive, Low Power, Low Noise, Data Hold	MAX136	Maxim	65
	NJU9208	NJR		3 1/2 Digits, Integrating, LED Drive, Low Power, Low Noise	ICL7137	Maxim	
3 3/4 Digit Multimeter LSI	NJU9210	NJR	15	3 1/2 Digits, Integrating, 2 Device Sets	ICL8052	Harris	70
3 3/4 Digits, Autoranging, LCD Drive	ICL7139	Harris		ICL8068	Harris		
3 Digits, Integrating	TSC827C	TeledyneC		LD110C	Siliconix		
3 Digits, Dual Slope, 2 Device Sets	CA3161	Harris		LD111AC	Siliconix		
	CA3162	Harris	20	3 1/2 Digits, Dual Slope	TSC8750	TeledyneC	75
	CA3162A	Harris		3 1/2—4 1/2 Digits, Ramp type, 2 Device Sets	MC1505	Rochester	
3 1/2	MAX140C	Maxim		3 3/4 Digits, Integrating	ZNA216E	GEC Plessey	
	MAX140E	Maxim			ZNA216J	GEC Plessey	
3 1/2 Digit, Integrating	MAX130	Maxim	25		ADC3711	National	80
	MAX131	Maxim			ADD3701	National	
	MAX138	Maxim		3- 1/2 Digit LCD Display Drive, 40-Segment Bar Graph, Autoranging	TSC818	TeledyneC	
	MAX139	Maxim		3- 1/2 Digits, Integrating, LCD Drive with Frequency Counter and Logic Probe	TSC821	TeledyneC	
3 1/2 Digit LDC Display Drive, Autoranging	TSC815	TeledyneC	30	3- 3/4 Digits, Integrating, LCD Drive with Frequency Counter and Logic Probe	TSC820	TeledyneC	85
3 1/2 Digits, Auto-Ranging	TSC805	TeledyneC		4 1/2 Digits, Integrating	TSC500C	TeledyneC	
3 1/2 Digits, Drives LCD DVM Display	ZN450	GEC Plessey			TSC7129C	TeledyneC	
	ZN451	GEC Plessey			TSC835	TeledyneC	
3 1/2 Digits, Integrating	ICL7106	Harris	35	4 1/2 Digits, Integrating, for Microprocessor or UART Systems	ICL7135	Harris	90
	ICL7107	Harris		4 1/2 Digits, Integrating, for microprocessor or UART systems	SI7135	Siliconix	
	ICL7116	Harris			TSC7135	TeledyneC	
	ICL7117	Harris		4 1/2 Digits, Integrating, LCD Drive	ICL7129A	Maxim	
	ICL7126	Harris	40	4 1/2 Digits, Integrating, BCD Output	ICL7135	Maxim	95
	ICL7136	Harris		4 1/2 Digits, Successive Integration	ICL7129	Harris	
	ICL7137	Harris		4 1/2 Digits, Dual Slope, 2 Device Sets	ICL8068A	Harris	
	ICL7106	Maxim			LD120C	Siliconix	
	ICL7107	Maxim	45		LD121AC	Siliconix	100
	ICL7116	Maxim			LD122C	Siliconix	
	ICL7117	Maxim		7	TL507	Ti	
	ICL7126	Maxim		10	TL505	Ti	
	ICL7136	Maxim	50	10-13	TL501	Ti	105
	MC14433	Motorola		13 Digits, Integrating	TSC7109AC	TeledyneC	
	ADC3511	National			TSC7109AM	TeledyneC	
	ADD3501	National			TSC7109AM/883	TeledyneC	
	KS7126	Samsung	55		TL500	Ti	110
	TSC14433	TeledyneC		14	TSC500AC	TeledyneC	
	TSC14433A	TeledyneC		16 Digits, Integrating	ICL7182	Harris	
	TSC14433B	TeledyneC		101 Segment LCD Bargraph			
	TSC7106	TeledyneC					
	TSC7106A	TeledyneC					
	TSC7107	TeledyneC					
	TSC7107A	TeledyneC					
	TSC7116	TeledyneC					
	TSC7116A	TeledyneC					
	TSC7117	TeledyneC					
	TSC7126	TeledyneC					
	TSC7126A	TeledyneC					
(Continued)							

INTERFACE—Digital to Analog Converters

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
3	1/2	450								x			x			4026	TeledyneC	
		750								x			x			4027	TeledyneC	
4	1/8	100		x	x			x		x						416BCD	Adv Analog	5
	1/4	0.3	85		x					x	x		x			ZN434E	GEC Plessey	
	1/2	0.020	430	x						x					x	MB40874	Fujitsu	
		20	100	x			x	x								MB86260	Fujitsu	
	1	6-9	1200	x						x	x	x		x	x	Bt455	Brooktree	
4 (triple)	1/2	0.005	1500	x						x		x				AD9702	AD	
4 (triple color video RAM/DAC)	1/2	0.0012 *																
		500 *		x						x	x				x	BT102	Brooktree	
4 (triple color video RAMDAC)	1/8	0.0012 *																
		500 *		x						x	x		x		x	BT103	Brooktree	10
4 (triple video)	1/8	0.005	1500	x								x	x			TDC1334	TRWLSI	
4 (triple video DAC)	1/4	0.008				x				x			x			ZN454CJ	GEC Plessey	
4 (triple video 16x12 RAMDAC)	1/2	0.0003 *																
		1000		x						x	x		x	x	x	BT454	Brooktree	
4 (triple video 256x12 RAMDAC)	1/2	0.0003 *																
		1500		x						x	x			x	x	BT451	Brooktree	
4 (video)	1/2	0.05	800	x	x					x					x	AH8404T	Analogic	15
		6.4	1125	x						x			x			HDG0407	AD	
4 (video DAC)	1/2	0.004		x	x					x		x				VDAC0405H	Adv Analog	
4 (video digital converter)	1/8	0.008	400	x								x			x	TDC1034	TRWLSI	
	1/2	0.004 *					x								x	HDG0405	AD	
		1040										x						
		0.005	2200		x							x			x	VDAC444E	Adv Analog	20
4 (Triple color RAMDAC)	1/2	0.008	x													MC10320	Motorola	
4 (Triple color video)	1/2	0.01		x						x	x				x	RGBDAC3404A	Adv Analog	
				x						x	x				x	RGBDAC3408	Adv Analog	
		0.012		x						x	x				x	RGBDAC3400S	Adv Analog	(3307)
				x						x	x				x	RGBDAC3405S	Adv Analog	(3307)
				x						x	x				x	VDAC3400S	Adv Analog	25
4 (Triple RAMDAC)	1/4	0.006	1000	x							x					BT454K170	Brooktree	
				x							x					BT455K170	Brooktree	
		0.009	1000	x							x					BT454K110	Brooktree	
				x							x					BT454K135	Brooktree	
				x							x					BT455K110	Brooktree	30
				x							x					BT455K135	Brooktree	
4 1/2	1/8	100		x	x			x		x						418BCD	Adv Analog	
6	—	2	120	x							x				x	MC144111	Motorola	
			185	x							x				x	MC144110	Motorola	35
	1/8	3	250			x	x			x			x			DAC01Y	AD	
	1/4	3	250			x	x			x			x			DAC01B	AD	
						x	x			x			x			DAC01C	AD	
						x	x			x			x			DAC01F	AD	
						x	x			x			x			DAC01H	AD	40
						x	x									μ PC603	NEC	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
6	1/2	200		x						x						TL5601C	Ti	(Cont'd)
		0.013 800		x							x					BT476	Brooktree	
		0.025		x		x	x	x			x					CXD1170	◊ Sony	
		0.03 130		x						x	x				x	HA19508	◊ Hitachi	
		0.04 110		x						x	x					μ PD6901C	NEC	
		0.05 225		x						x	x				x	HA19503	◊ Hitachi	
				x						x	x				x	HA19507	◊ Hitachi	
	1.0	25 *		x						x						ZN436E	GEC Plessey	
				x						x						ZN436J	† GEC Plessey	
	3	250				x	x			x			x			DAC01D	AD	
	10	50		x			x	x		x						LC89080	Sanyo	
6 *	1/2	150 33		x						x	x		x		x	KDA0406	◊ Samsung	
6	0.5	0.015 1500		x						x	x				x	AT76C176-66	◊ ATMEL	
		0.02 1500		x						x	x				x	AT76C171-50	◊ ATMEL	
				x						x	x				x	AT76C176-50	◊ ATMEL	
		0.025 1500		x						x	x				x	AT76C176-40	◊† ATMEL	
		0.028 1500		x						x	x				x	AT76C171-35	◊† ATMEL	
		0.03 80									x			x	x	LC89060	◊ Sanyo	
	1	800		x						x	x				x	BT471	Brooktree	
		0.033PS 220								x						MB40776	Fujitsu	
		0.05 300		x						x					x	MB40176	◊ Fujitsu	
	2	60		x						x	x			x	x	TDA8444	Signetics	
	3			x						x	x				x	TDA8442	Signetics	
6 (RAMDAC)	1/4	0.013 1000		x							x					BT471K66	◊ Brooktree	
				x							x					BT471K80	◊ Brooktree	
				x							x					BT475K66	◊ Brooktree	
				x							x					BT475K80	◊ Brooktree	
		0.020 1000		x							x					BT471K50	◊ Brooktree	
				x							x					BT475K50	◊ Brooktree	
		0.028 1000		x							x					BT475K35	◊ Brooktree	
	1/2	0.013 1000		x							x					BT476K66	◊ Brooktree	
		0.020 1000		x							x					BT476K50	◊ Brooktree	
		0.028 1000		x							x					BT476K35	◊ Brooktree	
6 (triple color video RAM DAC)	1/2	0.0125 800		x						x						AV3676	Avasem	
		0.02		x						x					x	IMSG170-50	SGS-Thomson	
		0.028		x						x					x	IMSG170-35	SGS-Thomson	
6 (triple RAMDAC)	1/2	13 1000		x							x					ADV471	◊ AD (3315)	
6 (triple video)	1/2	0.02 1000		x			x	x		x	x					DAC0630	National	
				x			x	x		x	x					DAC0631	National	
	1	0.004 500		x							x		x			USC1863	◊‡ Universal (3738)	
6 (triple video RAMDAC)	1	6 1.1		x							x				x	ADV476K50	AD	
				x							x				x	ADV476K66	AD	
		8 1.1		x							x				x	ADV476K35	AD	
6 (video)	1/2	0.015		x				x								ADV476-66	AD (3315)	
		0.02		x				x								ADV476-50	AD (3315)	
		0.03		x				x								ADV476-35	AD (3315)	
6 (video DAC)	1/2	0.006		x	x					x		x				VDAC0605H	Adv Analog	

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linearity Error \pm LSB	Settling Time μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line	
6 (video digital converter) 1/2 0.006 *																			
		1350				x						x			x	HDG0605	AD		
6/8	1	800		x						x	x				x	BT478	* Brooktree		
6/12-Binary Serial 1/2 — 5																			
6x3	1/2	0.0125	850	x						x				x	x	μ A9706C	National	5	
		0.015	800	x						x				x	x	TMC0176-8	TRWLSI		
		0.025	750	x						x				x	x	TMC0176-6	TRWLSI		
			800	x						x				x	x	TMC0171-4	TRWLSI		
				x						x				x	x	TMC0176-4	TRWLSI		
				x						x				x	x	TMC0176-5	TRWLSI		
		0.028	750	x						x	x			x	x	TMC0171	TRWLSI		
7	4	0.05		x						x	x	x	x		x	KSV3100AN-7	Samsung	10	
8	—	0.005	—	x								x	x	x		AD9768	AD (3312)		
		0.008		x								x	x		x	AD9700B	AD		
				x								x	x		x	AD9700S	AD		
	1/16			x							x				x	IXDP610	IXYS		
	1/8	0.1	5	x						x	x				x	MX7524	Maxim	15	
		0.1 *	10 *	x	x	x	x				x				x	MP7524L	MicroPwr		
				x	x	x	x				x				x	MP7524U	MicroPwr		
		0.1	30	x						x	x				x	MX7524C	Maxim		
				x						x	x				x	MX7524L	Maxim		
				x						x	x				x	MX7524U	Maxim	20	
		0.15	1.0 *	x	x	x	x				x				x	MP7523L	MicroPwr		
			1.5 *	x	x	x	x				x				x	AD7523L	AD		
				x	x	x	x				x				x	AD7523L	Harris		
			1.5	x	x	x	x				x				x	MX7523L	Maxim		
				x	x	x	x				x				x	MX7523U	Maxim	25	
		0.15 *	20 *	x	x					x	x				x	AD7524C	AD (3312)		
				x	x	x	x				x				x	AD7524L	AD (3312)		
				x	x	x	x			x	x				x	AD7524U	AD (3312)		
			670	x	x	x	x				x				x	AD7523J	Harris		
		0.2	24	x	x	x	x			x	x				x	MP7523C	MicroPwr	30	
			30	x	x	x	x			x	x				x	MP7628C	MicroPwr		
		0.35	450	x						x	x				x	PM7524A	AD (3312)		
				x						x	x				x	PM7524E	AD (3312)		
				x						x	x				x	PM7524G	AD (3312)		
		0.8 *	15 *	x						x	x				x	MP7628L	MicroPwr	35	
				x						x	x				x	MP7628U	MicroPwr		
		1	30	x						x	x				x	DAC0830	National		
		10 *	20	x	x	x	x				x				x	MP7524C	MicroPwr		
1/4	0.01	850		x								x				HDS0810E	AD	40	
				x								x				HDS0810EM	AD		
		0.013	900	x							x					Bt475	Brooktree		
		0.02	24	x	x	x	x			x	x				x	MP7523B	MicroPwr		
		0.08	15	x	x	x	x			x	x				x	MP7528XC	MicroPwr		
				x	x	x	x			x	x				x	MP7528XL	MicroPwr		
				x	x	x	x			x	x				x	MP7528XU	MicroPwr	45	
		0.085	33	x	x	x	x			x	x	x			x	IR9K08	Sharp		
		0.1	30	x						x	x				x	MX7524B	Maxim		
				x						x	x				x	MX7524K	Maxim		
				x						x	x				x	MX7524T	Maxim		
		0.135	174	x	x	x	x			x	x	x			x	ADDAC08A	AD	50	
				x	x	x	x			x	x	x			x	ADDAC08H	AD		
				x	x	x	x			x	x	x			x	DAC08A	AD (3312)		
				x	x	x	x			x	x	x			x	DAC08H	AD (3312)		
				x	x	x	x			x	x	x			x	DAC08A	Motorola		

(Continued)

(Continued)

† Mili Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1/4	0.135	174	x	x	x	x			x	x	x				DAC08H	Motorola	(Cont'd)
				x	x	x	x			x						DAC0802	† National	
				x	x	x	x			x						DAC0802C	National	
				x	x	x	x			x	x	x				DAC08A	† Raytheon	
				x	x	x	x			x	x	x				DAC08H	Raytheon	5
				x	x	x	x			x	x	x				DAC08A	◊† Signetics	
				x	x	x	x			x	x	x				DAC08H	◊ Signetics	
	0.15	1 *		x	x	x	x				x					MP7523K	MicroPwr	
		1.5 *		x	x	x	x				x					AD7523K	◊ AD	
				x	x	x	x				x					AD7523K	Harris	10
		1.5		x	x	x	x				x					MX7523K	Maxim	
				x	x	x	x				x					MX7523T	† Maxim	
		10 *		x	x	x	x				x					MP7524B	MicroPwr	
	0.15 *	10 *		x	x	x	x				x					MP7524K	MicroPwr	
				x	x	x	x				x					MP7524T	† MicroPwr	15
		20 *		x	x	x	x			x	x					AD7524B	◊ AD (3312)	
				x	x	x	x			x	x					AD7524K	◊ AD (3312)	
				x	x	x	x			x	x					AD7524T	◊† AD (3312)	
	0.15	330		x	x	x	x			x	x		x			DAC4888	Raytheon	
				x	x	x	x			x	x		x			DAC4888B	† Raytheon	20
	0.2	10		x	x	x	x			x	x					MP7529BL	◊ MicroPwr	
		30		x	x	x	x			x	x					MP7529AL	MicroPwr	
				x	x	x	x			x	x					MP7628B	◊ MicroPwr	
	0.2 *	255 *		x						x	x	x	x	x	x	SE5119	† Signetics	
		1300 *				x	x				x	x				HDH0802	AD	25
						x	x				x	x				HDH0802M	† AD	
	0.25	5		x						x	x					DAC08Q	† AD (3312)	
				x		x	x			x	x					DAC08RC	◊† AD (3312)	
				x						x	x					DAC8408A	† AD (3318)	
				x						x	x					DAC8408E	◊ AD (3318)	30
				x						x	x					DAC8408G	AD	
		170		x	x					x						DAC888A	† AD (3312)	
				x	x					x						DAC888E	AD (3312)	
	0.35	50		x						x	x					PM7524B	† AD (3312)	
				x						x	x					PM7524F	AD (3312)	35
				x						x	x					PM7524H	◊ AD (3312)	
	0.8 *	15 *		x						x	x					MP7628K	MicroPwr	
				x						x	x					MP7628T	† MicroPwr	
	1	30		x						x	x					DAC0831	National	
	1.5	375		x						x	x		x			AD558K	AD (3314)	40
	2 *	255		x						x	x	x	x	x	x	NE5019	Signetics	
				x						x	x	x	x	x	x	SE5019	† Signetics	
	2.5	330		x	x	x	x	x	x	x	x		x	x	x	DAC4888F	Raytheon	
	20 *	735 *		x	x						x	x				HDS0820	AD	
				x	x						x	x				HDS0820M	† AD	45
1/3	2.5	330		x	x	x	x	x	x	x	x		x	x	x	DAC4888D	Raytheon	
3/8	1.5	375		x						x	x		x			AD558T	† AD (3314)	
1/2				x						x	x					MAX500A	◊† Maxim	
		250		x						x						TL5602C	Ti	
		400		x						x	x					μPD6902C	NEC	50
	0.002	1000		x								x	x	x	x	BT107	Brooktree	
		3500 *		x								x				TQ6112	◊ TriQuint	
	0.003	3500		x						x		x	x			BT492	Brooktree	
	0.004			x			x						x			AD9701S	† AD	(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Setting Time μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1/2	0.004																(Cont'd)
			430	x		x						x		x	x	CX20202A-3	Sony	
			450	x								x		x	x	CX20201A-3	o Sony	
		0.007	350	x						x	x					TDA8702	o Signetics (3629)	
			1150	x						x					x	AH50008	Analogic	
		0.008		x	x					x		x				VDAC0805H	Adv Analog	5
			1000 *	x						x					x	IDT75C457	o† IDT	
			2500	x						x					x	AH8308TC	Analogic	
		0.02	174	x						x				x		DAC108B	o‡ AD	
				x						x				x		DAC108F	o‡ AD	
			225	x						x	x		x		x	HA19510	o Hitachi	10
		0.025		x		x	x	x			x					CXD1171	o Sony	
			250 *		x	x	x	x	x			x				IR3K07	Sharp	
			600	x		x				x					x	IR3K02	Sharp	
			630	x	x					x			x			DACHF8BC	Datel (3440)	
				x	x					x			x			DACHF8BM	Datel (3441)	15
		0.05	200	x			x	x								MB40568	Fujitsu	
		0.08	15	x	x	x	x			x	x			x	x	MP7528XB	MicroPwr	
				x	x	x	x			x	x			x	x	MP7528XK	MicroPwr	
				x	x	x	x			x	x			x	x	MP7528XT	† MicroPwr	
		0.1	5	x		x	x	x		x	x			x		7524	Rochester	20
				x		x	x	x		x	x			x		AD7524	TI	
				x			x	x			x				x	TLC7524C	TI	
				x			x	x			x				x	TLC7524I	TI	
		0.1 *	10 *	x	x	x	x				x			x	x	MP7524A	MicroPwr	
				x	x	x	x				x			x	x	MP7524J	MicroPwr	25
				x	x	x	x				x			x	x	MP7524S	† MicroPwr	
		0.1	30	x						x	x				x	MX7524A	Maxim	
				x						x	x				x	MX7524J	o Maxim	
				x						x	x				x	MX7524S	† Maxim	
		0.135	174	x	x	x	x			x	x	x		x		ADDAC08	† AD	30
				x	x	x				x	x	x		x		DAC08M	† National	
				x	x	x	x			x	x	x		x		DAC08	† Raytheon	
				x	x	x	x			x	x	x		x		DAC08	o† Signetics	
		0.15	1 *	x	x	x	x				x			x		MP7523J	MicroPwr	
			1.5 *	x	x	x	x				x			x		AD7523J	o AD	35
				x	x	x	x				x			x		AD7523S	o† AD	
			1.5	x	x	x	x				x			x		MX7523J	Maxim	
				x	x	x	x				x			x		MX7523S	† Maxim	
			1.5 *	x	x	x	x				x			x		7523	Rochester	
		0.15 *	20 *	x	x					x	x			x	x	AD7524A	o AD (3312)	40
				x	x	x	x				x			x	x	AD7524J	o AD (3312)	
				x	x	x	x				x			x	x	AD7524S	o† AD (3312)	
		0.15	174	x	x	x	x			x	x	x		x		ADDAC08E	AD	
				x	x	x	x			x	x	x		x		DAC08E	o AD (3312)	
				x	x	x	x			x	x	x		x		HA17008R	Hitachi	45
				x	x	x	x			x	x	x		x		DAC08E	Motorola	
				x	x	x	x			x	x	x		x		DAC08EC	National	
				x	x	x				x				x		μ PC624	NEC	
				x	x	x	x			x	x	x		x		DAC08E	Raytheon	
				x	x	x	x			x	x	x		x		DAC08E	o Signetics	50
		0.15 *	305	x						x	x			x		DAC0808	† National	
				x						x	x			x		DAC0808C	National	
		0.15	500	x		x				x	x				x	KDA0800	Samsung	
				x		x				x	x				x	KDA0801	Samsung	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1/2	0.16 *	222	x	x	x	x	x		x	x			x	x	AM6080C	AMD	(Cont'd)
				x	x	x	x	x		x	x			x	x	AM6080M	† AMD	
		0.18	15	x						x	x				x	MX7528B	Maxim	
				x						x	x				x	MX7528C	Maxim	
				x						x	x				x	MX7528K	◊ Maxim	5
				x						x	x				x	MX7528L	◊ Maxim	
				x						x	x				x	MX7528T	† Maxim	
				x						x	x				x	MX7528U	† Maxim	
		0.2	10	x	x	x	x			x	x			x	x	MP7529BK	◊ MicroPwr	
			24	x	x	x	x			x	x			x	x	MP7523A	◊ MicroPwr	10
				x	x	x	x			x	x			x	x	MP7523S	† MicroPwr	
			30	x	x	x	x			x	x			x	x	MP7529AK	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7628A	◊ MicroPwr	
		0.25	5	x						x	x			x	x	DAC8408B	† AD (3318)	15
				x						x	x			x	x	DAC8408F	AD (3318)	
				x						x	x			x	x	DAC8408H	◊ AD	
			38	x						x					x	MAX7624C	◊ Maxim	
				x						x					x	MAX7624E	Maxim	
				x						x					x	MAX7624M	† Maxim	
			170	x	x					x				x	x	DAC888B	† AD (3312)	20
				x	x					x				x	x	DAC888F	AD (3312)	
		0.25 *	265	x	x					x	x			x		DAC1408A-8	◊ AD (3312)	
				x	x					x	x			x		DAC1508A-8	† AD (3312)	
				x						x	x			x		HA17408	Hitachi	
		0.3	37.5	x	x					x	x			x	x	PM7628A	† AD (3318)	25
				x	x					x	x			x	x	PM7628E	AD (3318)	
				x	x					x	x			x	x	PM7628H	AD (3318)	
		0.3 *	305	x	x					x	x			x		DAC1C8BM	† Data	
				x										x		MC1408-8	Motorola	30
				x										x		MC1508-8	† Motorola	
				x						x	x			x		DAC1408	† National	
				x						x	x			x		DAC1408AC	National	
				x						x				x		MC1408-8	National	
				x						x				x		MC1508-8	† National	
				x						x				x		MC1408-8	Signetics	35
				x						x				x		MC1508-8	† Signetics	
		0.3	450	x	x					x			x			4020	TeledyneC	
		0.35	30	x						x					x	MX7628B	Maxim	
				x						x					x	MX7628K	◊ Maxim	
				x						x					x	MX7628T	† Maxim	40
		0.5	15 *	x						x	x			x	x	MP7628J	MicroPwr	
				x						x	x			x	x	MP7628S	† MicroPwr	
		0.6 *	500	x		x				x			x		x	XR9201	Exar	
		0.8	100 *	x	x					x	x		x		x	ZN428E-8	GEC Plessey	45
				x	x					x	x		x		x	ZN428J-8	† GEC Plessey	
			100	x						x	x		x		x	ZN558E-8	GEC Plessey	
				x						x	x		x		x	ZN558J-8	† GEC Plessey	
		1	2	x						x	x					ALD1801	◊† AdvLinear	
			15	x										x		ADC0852	National	50
				x										x		ADC0854	National	
			30	x						x	x			x		DAC0832	National	
			45 *	x						x	x		x			ZN426E-8	GEC Plessey	
				x						x	x		x			ZN426J-8	† GEC Plessey	
				x						x	x					ZN429E-8	GEC Plessey	
				x						x	x					ZN429J-8	† GEC Plessey	55

INTERFACE

Bin.—Binary
Off.—Offset
Compl.—Complementary
Magn.—Magnitude
Int Ref.—Internal Reference
CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1/2	1	75	x						x	x		x		x	AD557 \diamond AD (3314)	(Cont'd)	
			750	x						x			x			MN3008	MicroNet	
				x						x			x			MN3008H \uparrow MicroNet		
					x					x			x			MN3009	MicroNet	
					x					x			x			MN3009H \uparrow MicroNet		5
		1.25			x					x	x		x		x	ZN438E	GEC Plessey	
					x					x	x		x		x	ZN438J \uparrow GEC Plessey		
		1.5		x						x	x			x		AD7548K	AD (3313)	
				x						x	x			x		AD7548T \uparrow AD (3313)		
			75 *	x						x	x		x		x	AD558J	AD (3314)	10
			300	x	x					x	x			x		DAC331B-8 \uparrow Sipex-HSD		
				x	x					x	x			x		DAC331C-8	Sipex-HSD	
		2 *	255 *	x						x	x	x	x	x	x	NE5018	Signetics	
				x						x	x	x	x	x	x	SE5018 \uparrow Signetics		
		2	1000	x				x		x	x		x			DAC0890C \uparrow National		15
				x				x		x	x		x			DAC0890CM \uparrow National		
		2.5	570	x	x	x				x			x			MN3014	MicroNet	
				x	x	x				x			x			MN3014H \uparrow MicroNet		
		3	680	x	x								x			HS3020B \uparrow Sipex-HSD		20
				x	x								x			HS3020C	Sipex-HSD	
			830	x	x	x				x			x		x	MN3020	MicroNet	
				x	x	x				x			x		x	MN3020H \uparrow MicroNet		
		4	195	x						x					x	MX7225C	Maxim	
				x						x					x	MX7225L \diamond Maxim		
			230	x						x					x	MX7225U \uparrow Maxim		25
			1080	x	x		x			x	x		x		x	DAC336B-8 \uparrow Sipex-HSD		
				x	x		x			x	x		x		x	DAC336C-8	Sipex-HSD	
		5		x						x	x		x			AD7225L	AD (3316)	
			75	x						x	x			x	x	MX7224 \uparrow Maxim		
				x						x					x	MX7224C	Maxim	30
				x						x					x	MX7224L \diamond Maxim		
				x						x					x	MX7224U \uparrow Maxim		
			84	x	x	x	x			x	x				x	DAC8228F \diamond AD (3316)		
			115	x	x	x	x			x	x			x	x	DAC8229A \uparrow AD (3316)		
				x	x	x	x			x	x			x	x	DAC8229E	AD (3316)	35
				x	x	x	x			x	x			x	x	DAC8229F \diamond AD (3316)		
			310	x						x	x				x	MX7228C	Maxim	
				x						x	x				x	MX7228L \diamond Maxim		
				x						x	x				x	MX7228U \uparrow Maxim		
			450	x			x	x		x						PM7224A \uparrow AD (3314)		40
				x			x	x		x						PM7224E	AD (3314)	
				x			x	x		x						PM7224G	AD (3314)	
		6		x									x			AD9703	AD	
		10		x												ADV101	AD (3315)	
		20	285	x						x	x		x			DAC336B-1 \uparrow Sipex-HSD		45
				x						x	x		x			DAC337B-0 \uparrow Sipex-HSD		
				x						x	x		x			DAC337B-2 \uparrow Sipex-HSD		
				x						x	x		x			DAC337C-0	Sipex-HSD	
				x						x	x		x			DAC337C-1	Sipex-HSD	
				x						x	x		x			DAC337C-2	Sipex-HSD	50
		23 *	585			x				x	x		x			MN3000	MicroNet	
						x				x	x		x			MN3000H \uparrow MicroNet		
					x					x	x		x			MN3001	MicroNet	
					x					x	x		x			MN3001H \uparrow MicroNet		
				x						x	x		x			MN3002	MicroNet	55

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1/2	23 *	585	x						x	x		x			MN3002H	† MicroNet	(Cont'd)
					x					x	x		x			MN3006	MicroNet	
					x					x	x		x			MN3006H	† MicroNet	
	25	600		x	x					x			x			4021	TeledyneC	
	30	570		x	x	x				x			x			MN3013	MicroNet	5
				x	x	x				x			x			MN3013H	† MicroNet	
	40	300			x					x	x		x			DAC337B-6	† Sipex-HSD	
					x					x	x		x			DAC337C-6	Sipex-HSD	
	100	5		x							x			x	x	TLC7528C	TI	10
				x							x			x	x	TLC7528I	TI	
	20			x						x	x				x	TLC7628C	TI	
	3/4	1.5	375	x						x	x		x		x	AD558S	† AD (3314)	
	0.5	0.03	450								x			x	x	LC89080	Sanyo	
	1			x						x	x					BT457KG100	Brooktree	15
				x						x	x					BT457KG125	Brooktree	
				x						x	x					BT457KG75	Brooktree	
				x						x	x				x	MAX500B	† Maxim	
	1800			x							x					BT458/883	*† Brooktree	
	.02	315		x	x	x					x				x	CA3338	† Harris	20
	0.002 *			x						x					x	BT106	Brooktree	
		250 *		x						x						BT468	Brooktree	
	0.005			x							x					BT462	Brooktree	
	0.006	1500		x							x					BT460	Brooktree	
	0.008	1100		x							x					BT461	Brooktree	25
		1800		x						x	x				x	BT459	Brooktree	
		2000		x							x					SC11401	Sierra	
	0.01	200		x		x					x		x		x	SC11402	Sierra	
				x							x		x		x	SC11403	Sierra	
		250		x		x					x		x		x	SC11404	Sierra	
				x							x		x		x	BT474	Brooktree	30
	0.012	1375		x						x	x		x	x	x	BT121	Brooktree	
	0.0125	0.6		x						x	x		x		x	BT477	Brooktree	
	0.013	900		x							x					BT473	Brooktree	
				x							x					BT479	Brooktree	
		1000		x							x					BT453/883	† Brooktree	35
	0.025	1000		x							x					MB40778	Fujitsu	
	0.033	250								x						MC1408-7	Signetics	
	0.07	305		x						x	x			x		MP7528XA	MicroPwr	
	0.08	15		x	x	x	x			x	x			x	x	MP7528XJ	MicroPwr	
				x	x	x	x			x	x			x	x	MP7528XS	† MicroPwr	40
	0.085	33								x	x	x				MB4072	Fujitsu	
	0.15	33		x			x							x		DAC0800L	† National	
				x			x							x		DAC0800LC	National	
		174		x	x	x	x			x	x	x		x		ADDAC08C	AD	45
				x	x	x	x			x	x	x		x		DAC08C	† AD (3312)	
				x	x	x	x			x	x	x		x		DAC08C	Motorola	
				x	x	x	x			x	x	x		x		DAC08C	National	
				x	x	x				x				x		DAC0801C	National	
				x	x	x	x			x	x	x		x		DAC08C	Raytheon	
				x	x	x	x			x	x	x		x		DAC08C	† Signetics	50
		500		x		x				x	x				x	KDA0802	Samsung	
	0.18	15		x						x	x				x	MX7528A	Maxim	
				x						x	x				x	MX7528J	† Maxim	
				x						x	x				x	MX7528S	† Maxim	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linearity Error \pm LSB	Settling Time μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8	1	0.2	10	x	x	x	x			x	x			x	x	MP7529BJ \diamond MicroPwr	(Cont'd)	
		30		x	x	x	x			x	x			x	x	MP7529AJ \diamond MicroPwr		
	0.25 *	265		x	x					x	x			x		DAC1408A-7 AD	(3312)	
				x	x					x	x			x		DAC1408BC National		
	0.3			x	x			x	x	x	x			x		NJU8001 \diamond NJR		5
	0.3 *	305		x										x		MC1408-7 Motorola		
				x						x				x		DAC0807C National		
				x						x				x		MC1408-7 National		
	0.5	300		x	x	x	x			x	x			x	x	MP7641J \diamond MicroPwr		10
				x	x	x	x			x	x			x	x	MP7651J \diamond MicroPwr		
	0.8	100		x	x					x	x		x		x	ZN559E \ddagger GEC Plessey		
				x	x					x	x		x		x	ZN559J \uparrow GEC Plessey		
	1	60		x						x	x		x		x	AD7569 \diamond \uparrow AD	(3314, 3320, 3350)	
	1.5									x				x		AD7548J AD	(3313)	
										x				x		AD7548S \uparrow AD	(3313)	15
	3	300		x				x		x						μ PD7011 NEC		
	4	36		x						x	x			x	x	DAC8800B \diamond \uparrow AD	(3316)	
				x						x	x			x	x	DAC8800F \diamond AD	(3316)	
		195		x						x					x	MX7225B Maxim		20
				x						x					x	MX7225K \diamond Maxim		
		230		x						x					x	MX7225T \uparrow Maxim		
	5			x						x	x			x	x	AD7224C AD	(3314)	
				x						x	x			x	x	AD7224L AD	(3314)	
				x						x	x		x			AD7225K AD	(3316)	
		60		x						x	x		x		x	DAC8426B \diamond \uparrow AD	(3316)	25
				x						x	x		x		x	DAC8426F \diamond AD	(3316)	
		75		x						x					x	MX7224B Maxim		
				x						x					x	MX7224K \diamond Maxim		
				x						x					x	MX7224T \uparrow Maxim		
		240		x						x	x			x	x	AD7228 \diamond \uparrow AD	(3316)	30
		310		x						x	x				x	MX7228B Maxim		
				x						x	x				x	MX7228K \diamond Maxim		
				x						x	x				x	MX7228T \uparrow Maxim		
		450		x				x	x	x						PM7224B \uparrow AD	(3314)	35
				x				x	x	x						PM7224F AD		
				x				x	x	x						PM7224H \diamond AD	(3314)	
	6-9			x						x	x	x		x	x	Bt463 \diamond Brooktree		
	60			x		x	x	x								MB88341 Fujitsu		
				x		x	x	x								MB88342 Fujitsu		
	1.5	90	300	x							x					PCF8591 \diamond Signetics		40
	2	0.04		x						x	x	x	x		x	KSV3110N-8 Samsung		
			900	x		x				x	x				x	KDA3310J-8 Samsung		
	0.25 *	265		x	x					x	x			x		DAC1408A-6 AD	(3312)	
				x	x					x	x			x		DAC1408CC National		
	0.3 *	305		x										x		MC1408-6 Motorola		45
				x						x				x		DAC0806C National		
				x						x				x		MC1408-6 National		
	5			x						x	x			x	x	AD7224B AD	(3314)	
				x						x	x			x	x	AD7224K AD	(3314)	
		200		x						x	x			x	x	MX7226B Maxim		50
				x						x	x			x	x	MX7226K Maxim		
				x						x	x			x	x	MX7226T \uparrow Maxim		
8 (A/D, D/A, with counter)																		
	1/2	2	175	x						x	x		x			ZN425E-8 GEC Plessey		
	1	2	175	x						x	x		x			ZN425J-8 \uparrow GEC Plessey		

 \uparrow Mil Temp Range (-55° to 125°C) \ddagger High Rad Resistance

*Typical Value

*Behavioral Model Available

 \diamond Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8 (D/A, with counter/clock)	1/2	0.8	—	x						x	x		x			ZN435E	GEC Plessey	
				x						x	x		x			ZN435J	† GEC Plessey	
8 (dual)	1/2	0.18	5	x						x	x			x	x	MX7528	† Maxim	5
		0.2 *		x						x	x			x	x	AD7528M	◊† Ti	
		0.35	120	x			x	x								MX7628C	Maxim	
		1 *		x							x					AD7669	AD (3316, 3320, 3350)	
		2.5		x				x								AD7769	AD (3316, 3320, 3325)	
	1	0.03	270	x			x	x								MB40968	Fujitsu	10
		0.35	120	x			x	x								MX7628A	Maxim	
				x			x	x								MX7628J	Maxim	
				x			x	x								MX7628S	† Maxim	
8 (dual matched)	1/2	0.35	5	x						x	x			x	x	PM7528A	◊† AD (3318)	15
				x						x	x			x	x	PM7528B	† AD (3318)	
				x						x	x			x	x	PM7528E	AD (3318)	
				x						x	x			x	x	PM7528F	AD (3318)	
				x						x	x			x	x	PM7528G	AD (3318)	
				x						x	x			x	x	PM7528H	◊ AD (3318)	
8 (octal)	1/2	5	310	x	x					x	x			x	x	PM7228A	◊† AD	20
				x	x					x	x			x	x	PM7228E	AD	
		50	1000	x						x					x	BT110	Brooktree (3406)	
	1	5	310	x	x					x	x			x	x	PM7228F	◊ AD	
8 (quad)	1/2	0.5		x												MB86023	Fujitsu	25
		5	144	x						x	x				x	PM7226A	† AD	
				x						x	x				x	PM7226E	AD	
				x						x	x				x	PM7226G	AD	
				x						x	x			x	x	MX7225	† Maxim	
	1	3	300	x							x		x			USC1841	◊‡ Universal	30
		5	144	x						x	x				x	PM7226B	† AD	
				x						x	x				x	PM7226F	AD	
					x					x	x			x	x	DAC8840	◊† AD (3316)	
		300			x					x	x			x	x	DAC8841	◊† AD (3316)	
				x			x	x		x	x					PM7226H	◊ AD	
		500		x				x	x	x	x							
8 (QUAD with memory)	1/2	10	4	x						x	x					OPT504	Optimum Semi	
8 (RAMDAC)	1/2	0.006	3500	x								x				BT492K360	◊ Brooktree	35
		1	0.006	x							x					BT461K170	◊ Brooktree	
				x							x					BT462K170	◊ Brooktree	
	1	0.008	1000	x							x					BT451K110	◊ Brooktree	40
				x							x					BT451K125	◊ Brooktree	
				x							x					BT451K80	◊ Brooktree	
				x							x					BT457K110	◊ Brooktree	
				x							x					BT457K125	◊ Brooktree	
				x							x					BT457K80	◊ Brooktree	
				x							x					BT458K110	◊ Brooktree	
				x							x					BT458K125	◊ Brooktree	
				x							x					BT458K80	◊ Brooktree	
				x							x					BT458L165	◊ Brooktree	
				x							x					BT459K110	◊ Brooktree	
				x							x					BT459K135	◊ Brooktree	
				x							x					BT460K110	◊ Brooktree	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error ± LSB	Settling Time ± ½LSB µS	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line	
8 (RAMDAC)																		(Cont'd)	
1	0.008	1000		x							x					BT460K135	Brooktree	5	
				x							x				BT461K110	Brooktree			
				x							x					BT461K135	Brooktree		
				x							x					BT462K110	Brooktree		
				x							x					BT462K135	Brooktree		
				x							x					BT463K110	Brooktree		
				x							x					BT463K135	Brooktree		
				x							x					BT463K170	Brooktree		
				x							x					BT468K170	Brooktree	10	
				x							x					BT468K200	Brooktree		
			0.012	x							x					BT459K80	Brooktree		
				x							x					BT460K80	Brooktree		
				x							x					BT461K80	Brooktree		
				x							x					BT462K80	Brooktree		
			0.013	x							x					BT477K66	Brooktree	15	
				x							x					BT477K80	Brooktree		
				x							x					BT478K66	Brooktree		
				x							x					BT478K80	Brooktree		
			0.020	x							x					BT477K50	Brooktree	20	
				x							x					BT478K35	Brooktree		
				x							x					BT478K50	Brooktree		
				x							x					BT479K80	Brooktree		
			1000	x							x					BT479K50	Brooktree	25	
				0.028	x						x					BT477K35	Brooktree		
					x							x				BT479K35	Brooktree		
					x							x				BT479K66	Brooktree		
8 (triple)	1/2	0.008	1000 *	x						x					x	IDT75C458	† IDT	30	
		1200 *	x									x	x	x	x	IDT75MB38	IDT		
	0.0125	768	x							x	x	x		x	x	TMC0458	TRWLSI		
	0.016	360	x							x			x		x	CX20206	Sony		
	0.03	200	x							x					x	HD49304	Hitachi		
	20	400	x													ADV7120	AD		
8 (triple color video RAM/DAC)										x	x				x	BT101	† Brooktree		
8 (triple color video RAMDAC)																			
1/2				0.008 *															
				8000	x							x			x	RGBDAC8E	Adv Analog		
8 (triple RAMDAC)																			
1/2					x						x					ADV453	AD (3315)	35	
13				1000	x						x			x	ADV478	Brooktree (3315)			
8 (triple video)																			
1/2				0.004	2000	x						x	x	x	x	SCD6038	STC		
				0.005	2000	x						x	x			TDC1318	TRWLSI		
8 (triple video RAM/DAC)										x	x					x	RGBDAC3800	† Adv Analog	40
1.0				0.01		x				x	x				x	RGBDAC3808			
																	† Adv Analog		
8 (triple video 256x24 RAM/DAC)																			
1				0.0003 *							x					BT458	Brooktree *		
				2000	x														
				0.0012 *															
				1000	x						x					BT453	Brooktree		
8 (triple video 256x24 RAMDAC)																			
1/2				0.0012 *							x					FVG453	National		
				1000	x														

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◇ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8 (video)																		
1/2	0.002			x		x	x	x				x				CXA1236	◊ Sony	5
	0.003			x		x	x	x				x				CXA1156	◊ Sony	
	0.004	458		x								x				MC10324	Motorola	
		469		x						x						MC10322	Motorola	
	0.0125			x				x								ADV7120-80	AD (3315)	
	0.02			x				x								ADV7120-50	AD (3315)	
	0.03			x				x								ADV7120-35	AD (3315)	
0.4	1125		x							x			x			HDG0807	AD	
1	0.02	100 *		x			x	x								USC1850/1852	Universal (3737)	10
				x			x	x								USC1852	Universal (3737)	
8 (video DAC)																		
1/2	0.008			x						x	x				x	VDAC1850	Adv Analog	15
				x						x	x				x	VDAC1852	Adv Analog	
	0.015			x						x	x				x	VDAC1840	Adv Analog	
				x						x	x				x	VDAC1842	Adv Analog	
1.0	.0075			x						x	x				x	VDAC8308TH	† Adv Analog	
8 (video digital converter)																		
1/4	0.01	1976		x								x				HDD0810	AD	20
				x								x				HDD0810M	† AD	
		2028		x								x				HDD0810C	AD	
				x								x				HDD0810CM	† AD	
1/2	0.0025			x								x	x		x	HDAC51400	Signal Proc	25
	0.0036			x								x			x	HDAC10180A	Signal Proc	
	0.005	—										x		x		SP9768	GEC Plessey	
	0.006			x								x			x	HDAC10180B	Signal Proc	
	0.008	800		x								x			x	TDC1018	TRWLSI	
		1660				x						x				HDG0805	AD	
	0.05			x						x						μPD6900	NEC	
	0.07	1000		x								x			x	AH8308E	Analogic	
				x						x					x	AH8308T	Analogic	
	165 MSPS			x								x	x		x	HDAC10181B	Signal Proc	
275 MSPS			x								x	x		x	HDAC10181A	Signal Proc		
0.005	0.0004	2100		x								x	x		x	HDAC97000	† Signal Proc	
8 (w/8-bit A/D)																		
1	0.05			x									x			KSV3110-8	Samsung	
8 (Dual, Matched)																		
1/2	0.2			x						x	x			x	x	AD7528B	◊ AD (3318)	35
				x						x	x			x	x	AD7528C	◊† AD (3318)	
				x						x	x			x	x	AD7528K	◊ AD (3318)	
				x						x	x			x	x	AD7528L	◊ AD (3318)	
				x						x	x			x	x	AD7528T	◊† AD (3318)	
				x						x	x			x	x	AD7528U	◊† AD (3318)	
1	0.2			x						x	x			x	x	AD7528A	◊ AD (3318)	40
				x						x	x			x	x	AD7528J	◊ AD (3318)	
				x						x	x			x	x	AD7528S	◊† AD (3318)	
8 (Triple RAMDAC)																		
1	0.012	1000		x							x					BT474K85	◊ Brooktree	45
	0.013	1000		x							x					BT473K35	◊ Brooktree	
				x							x					BT473K50	◊ Brooktree	
				x							x					BT473K66	◊ Brooktree	
				x							x					BT473K80	◊ Brooktree	
	0.014	1000		x							x					BT474K66	◊ Brooktree	
	0.025	1000		x							x					BT453K40	◊ Brooktree	
				x							x					BT453K66	◊ Brooktree	
8 (Quad)																		
2	5			x						x	x			x	x	AD7226B	AD (3316)	50
(Continued)																		

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
8 (Quad)	2	5		x						x	x			x	x	AD7226K	AD	(Cont'd) (3316)
				x						x	x			x	x	AD7226T	† AD	(3316)
8 (12-Channel)	1/2	60	200	x				x	x							MB88346	Fujitsu	
8 (3 channel)	1	0.015	350	x						x			x	x	x	MB40978	Fujitsu	
8 (3-Channel)	0.01	0.016	380	x						x			x			MB86029	◊ Fujitsu	5
8 (4-Channel)	0.01	5	40	x						x			x			MB86021	◊ Fujitsu	
	0.1	2	80	x						x			x			MB6023	◊ Fujitsu	
	5	14		x						x			x			MB86022	◊ Fujitsu	
8 (7-Bits plus Sign) Companding	1/2	0.5	207							x	x	x		x		DAC88E	AD	
	1/2 step									x	x	x		x		DAC89E	AD	(3312)
	0.5	500								x	x	x		x				
8-2 Digit BCD	1/2	0.15	194							x	x	x		x		DAC20C	AD	(3312)
8 (quad)	1/2	3	210	x						x	x		x		x	DAC8426A	† AD	(3316)
				x						x	x		x		x	DAC8426E	AD	(3316)
	5	144		x						x	x				x	PM7226AA	† AD	(3316)
	1	5	144	x						x	x				x	PM7226AF	◊ AD	15
9	1/2	0.005	390	x		x						x		x	x	CX20201A-2	◊ Sony	
			430	x		x						x		x	x	CX20202A-2	Sony	
	1	0.04		x						x	x	x	x		x	KSV3110N-9	Samsung	
			900	x						x	x				x	KDA3310J-9	Samsung	
9 (w/8-bit A/D)	1	0.05		x									x			KSV3110-9	Samsung	20
10	4/5	0.014	550	x								x	x		x	CX20051A	Sony	
	1/4	0.025 *	735	x	x					x	x					HDS1025	AD	
				x	x					x	x					HDS1025M	† AD	
		0.25 *	275	x	x					x	x		x			AD561K	AD	(3312)
				x	x					x	x		x			AD561T	† AD	(3312)
		0.3 *	1300			x	x			x	x		x			HDH1003	AD	
	1/2		200	x						x						AD7533C	Ti	
		0.005	390	x		x						x		x	x	CX20201A-1	◊ Sony	
			430	x		x						x		x	x	CX20202A-1	Sony	
		0.01	700	x		x		x		x		x			x	TDC1016-10	TRWLSI	30
			990	x								x				HDS1015E	AD	
				x								x				HDS1015EM	† AD	
		0.013		x								x		x		SP9770	GEC Plessey	
		0.02	225	x						x	x		x		x	HA19505	◊ Hitachi	
		0.025	705	x	x					x			x			DACHF10BC	Datel	35
				x	x					x			x			DACHF10BM	Datel	
			883	x						x		x		x	x	TDC1014	◊ TRWLSI	
		0.033	300									x				MB40748-9	Fujitsu	
		0.04		x						x	x	x	x		x	KSV3110N-10	Samsung	
			900	x						x	x				x	KDA3310J-10	Samsung	40
		0.135	276	x		x				x	x			x		DAC10B	Raytheon	
				x		x				x	x			x		DAC10C	Raytheon	
		0.15	450	x	x	x	x			x	x	x		x		DAC10B	† AD	(3312)
				x	x	x	x			x	x	x		x		DAC10C	† AD	(3312)
				x	x	x	x			x	x	x		x		DAC10F	AD	(3312)
				x	x	x	x			x	x	x		x		DAC10G	AD	(3312)
		0.25 *	275	x	x					x	x		x			AD561J	AD	(3312)

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
10	1/2	0.25 *	275	x	x					x	x		x			AD561S	AD (3312)	(Cont'd)
			300	x						x	x		x	x		NE5410	Signetics	
				x						x	x		x	x		SE5410	Signetics	
	0.25	380		x						x	x			x		MC3410	Signetics	5
				x						x	x			x		MC3510	Signetics	
	0.3	—		x	x						x			x		AD7527C	AD	
				x	x						x			x		AD7527GC	AD	
				x	x						x			x		AD7527L	AD	
				x	x						x			x		AD7527U	† AD	
		450		x	x					x			x			4022	TeledyneC	10
	0.3 *	1300				x	x			x	x		x			HDH1003M	† AD	
	0.375	300				x	x			x			x			DAC100A	‡ AD (3312)	
	0.5 *	20 *		x	x	x	x			x	x			x		AD7520L	◊ AD	
				x	x	x	x			x	x			x		AD7520U	◊† AD	
				x	x	x	x			x	x			x		AD7530L	◊ AD	15
				x	x	x	x							x		AD7520L	Harris	
				x	x	x	x							x		AD7520U	† Harris	
				x	x	x	x			x	x			x		AD7530L	Harris	
	0.5	20		x	x	x	x			x	x			x		MX7520U	† Maxim	
				x	x	x	x			x	x			x		MX75206	Maxim	20
				x	x	x	x			x	x			x		MX7530L	Maxim	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7520L	MicroPwr	
	0.5	20		x	x	x	x			x	x			x		MP7520R	MicroPwr	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7520U	† MicroPwr	
	0.5	20		x	x	x	x			x	x			x		MP7520Y	† MicroPwr	25
	0.5 *	20 *		x	x					x	x			x	x	MP7522L	MicroPwr	
				x	x	x	x			x	x			x	x	MP7522U	† MicroPwr	
				x						x	x			x	x	DAC1000	† National	
				x						x	x			x	x	DAC1000C	National	
				x	x	x	X			x	x			x	x	DAC1006	† National	30
				x	x	x	X			x	x			x	x	DAC1006C	National	
	0.5	30		x	x	x	x			x	x			x	x	MP7530L	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7533C	◊ MicroPwr	
	0.5 *	40		x	x	x	X			x	x			x	x	AD7522L	◊ AD	35
				x	x	x	X			x	x			x	x	AD7522U	◊† AD	
	0.6	10		x	x					x	x			x		PM7533A	† AD (3312)	
				x	x					x	x			x		PM7533E	AD (3312)	
				x	x					x	x			x		PM7533G	AD (3312)	
		30		x	x	x	x			x	x			x		AD7533C	◊ AD (3312)	
				x	x	x	x			x	x			x		AD7533L	◊ AD (3312)	40
				x	x	x	x			x	x			x		AD7533U	◊† AD (3312)	
		30		x	x	x	x			x	x			x		MX7533C	Maxim	
				x	x	x	x			x	x			x		MX7533L	Maxim	
				x	x	x	x			x	x			x		MX7533U	† Maxim	
	0.6 *	30 *		x	x	x	x			x	x			x		MP7533L	MicroPwr	45
				x	x	x	x			x	x			x		MP7533U	† MicroPwr	
	0.8 *	30 *		x	x	x	x			x	x			x		AD7533L	Harris	
	1	450		x	x	x	x			x	x			x		MP7633C	MicroPwr	
				x	x	x	x			x	x			x		MP7633L	MicroPwr	
				x	x	x	x			x	x			x		MP7633U	† MicroPwr	50
	1.5 *	350		x					x	x	x		x			DAC05E	AD (3314)	
	4 *	255		x						x	x	x	x	x	x	NE5020	Signetics	
	10	715				x	x			x			x			MN3040	MicroNet	
						x	x			x			x			MN3040H	† MicroNet	(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
10	1/2	20	150			x	x			x	x		x			DAC347LPB-10B † Sipex-HSD	(Cont'd)	
						x				x	x		x			DAC347LPB-10U † Sipex-HSD		
						x	x			x	x		x			DAC347LPC-10B Sipex-HSD		
						x				x	x		x			DAC347LPC-10U Sipex-HSD		
		285			x					x	x		x			DAC337B-4 † Sipex-HSD	5	
				x						x	x		x			DAC337B-5 † Sipex-HSD		
					x					x	x		x			DAC337C-4 Sipex-HSD		
				x						x	x		x			DAC337C-5 Sipex-HSD		
		23 *	585			x				x			x			MN3003 MicroNet		
						x				x			x			MN3003H † MicroNet	10	
					x					x			x			MN3004 † MicroNet		
					x					x			x			MN3004H † MicroNet		
				x						x			x			MN3005 MicroNet		
				x						x			x			MN3005H † MicroNet		
					x					x			x			MN3007 MicroNet	15	
					x					x			x			MN3007H † MicroNet		
		25	600	x	x					x			x			4023 TeledyneC		
		30	195									x		x	x	MDAC6003 Adv Analog		
		40	300			x				x	x		x			DAC337B-3 † Sipex-HSD		
					x					x	x		x			DAC337B-7 † Sipex-HSD	20	
						x				x	x		x			DAC337C-3 Sipex-HSD		
					x					x	x		x			DAC337C-7 Sipex-HSD		
		150	30	x						x						TLC7533C TI		
		500 *	24	x						x	x			x		AD7520L National		
				x						x	x			x		AD7520U † National	25	
				x						x	x			x		DAC1020 † National		
				x						x	x			x		DAC1020C National		
0.01	0.016	300		x								x	x			MB40730 ♦ Fujitsu		
				x						x			x			MB40760 ♦ Fujitsu		
1	0.005			x									x			AD9720 AD (3312)	30	
				x									x			AD9721 AD (3312)		
	0.01	700		x		x				x					x	TDC1016-9 TRWLSI		
	0.033	300										x				MB40748-8 Fujitsu		
	0.25	380		x						x	x			x		MC3410C Signetics		
	0.3	—		x	x						x			x		AD7527B AD	35	
				x	x						x			x		AD7527K AD		
				x	x						x			x		AD7527T † AD		
		300				x	x			x			x			DAC100B ‡ AD (3312)		
	0.5			x												DAC86 AD (3312)		
		30		x	x	x	x			x	x			x	x	MP7533B ♦ MicroPwr	40	
	0.5 *	20 *		x	x	x	x			x	x			x		AD7520K ♦ AD		
				x	x	x	x			x	x			x		AD7520T ♦† AD		
				x	x	x	x			x	x			x		AD7530K ♦ AD		
				x	x	x	x			x	x			x		AD7520K Harris	45	
				x	x	x	x			x	x			x		AD7520T † Harris		
				x	x	x	x			x	x			x		AD7530K Harris		
	0.5	20		x	x	x	x			x	x			x		MX7520K † Maxim		
				x	x	x	x			x	x			x		MX7520T † Maxim		
				x	x	x	x			x	x			x		MX7530K Maxim		
	0.5 *	20 *		x	x	x	x			x	x			x		MP7520K MicroPwr	50	
	0.5	20		x	x	x	x			x	x			x		MP7520Q MicroPwr		
	0.5 *	20 *		x	x	x	x			x	x			x		MP7520T † MicroPwr		

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
10	1	0.5	20	x	x	x	x			x	x			x		MP7520W	† MicroPwr	(Cont'd)
		0.5 *	20 *	x	x	x	x			x	x			x	x	MP7522K	MicroPwr	
				x	x	x	x			x	x			x		MP7530K	MicroPwr	
				x	x	x	x			x	x			x	x	DAC1001	† National	5
				x	x	x	x			x	x			x	x	DAC1001C	National	
				x	x	x	x			x	x			x	x	DAC1007	† National	
				x	x	x	x			x	x			x	x	DAC1007C	National	
		40		x	x	x	x			x	x			x	x	AD7522K	◊ AD	
				x	x	x	x			x	x			x	x	AD7522T	◊† AD	
		40 *		x	x	x	x			x	x			x	x	MP7522T	† MicroPwr	10
	0.6			x	x		x	x		x	x			x		NJU8101	NJR	
	10			x	x					x	x			x		PM7533B	† AD (3312)	
				x	x					x	x			x		PM7533F	AD (3312)	
				x	x					x	x			x		PM7533H	◊ AD (3312)	
	30			x	x	x	x			x	x			x		AD7533B	◊ AD (3312)	15
				x	x	x	x			x	x			x		AD7533K	◊ AD (3312)	
				x	x	x	x			x	x			x		AD7533T	◊† AD (3312)	
				x	x	x	x			x	x			x		MX7533B	Maxim	
				x	x	x	x			x	x			x		MX7533K	Maxim	
				x	x	x	x			x	x			x		MX7533T	† Maxim	20
	0.6 *	30 *		x	x	x	x			x	x			x		MP7533K	MicroPwr	
	0.8 *	30 *		x	x	x	x			x	x			x		AD7533K	Harris	
	1	450		x	x	x	x			x	x			x		MP7633B	MicroPwr	
				x	x	x	x			x	x			x		MP7633K	MicroPwr	
				x	x	x	x			x	x			x		MP7633T	† MicroPwr	25
	1.5 *	300			x			x		x	x		x			DAC06E	AD (3314)	
		350		x						x	x		x			DAC03AD	AD	
	30 MSPS	450										x				MB40788	Fujitsu	
	500 *	24		x						x	x			x		AD7520K	National	30
				x						x	x			x		AD7520T	National	
				x						x	x			x		DAC1021	† National	
				x						x	x			x		DAC1021C	National	
2	0.01	700		x		x		x		x		x			x	TDC1016-8	TRWLSI	
	0.225	300				x	x			x			x			DAC100C	† AD (3312)	35
	0.5 *	20 *		x	x	x	x			x	x			x		AD7520J	◊ AD	
				x	x	x	x			x	x			x		AD7520S	◊† AD	
				x	x	x	x			x	x			x		AD7530J	◊ AD	
				x	x	x	x			x	x			x		AD7520J	Harris	
				x	x	x	x			x	x			x		AD7520S	† Harris	
				x	x	x	x			x	x			x		AD7530J	Harris	40
	0.5	20		x	x	x	x			x	x			x		MX7520J	Maxim	
				x	x	x	x			x	x			x		MX7520S	† Maxim	
				x	x	x	x			x	x			x		MX7530J	Maxim	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7520J	MicroPwr	45
				x	x	x	x			x	x			x		MP7520S	MicroPwr	
				x	x	x	x			x	x			x	x	MP7522J	MicroPwr	
				x	x	x	x			x	x			x	x	MP7522S	† MicroPwr	
				x	x	x	x			x	x			x		MP7530J	MicroPwr	
				x	x	x	x			x	x			x		DAC1002	† National	
				x	x	x	x			x	x			x	x	DAC1002C	National	50
							x			x	x					DAC1008	† National	
							x			x	x			x	x	DAC1008C	National	
	0.5	30		x	x	x	x			x	x			x	x	MP7533J	◊ MicroPwr	
	0.5 *	40		x	x	x	x			x	x			x	x	AD7522J	◊ AD	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
10	2	0.5 *	40	x	x	x	x			x	x			x	x	AD7522S \diamond \dagger AD	(Cont'd)	
		0.5	430	x	x	x	x			x	x			x	x	MP7533A \diamond MicroPwr		
		0.6	30	x	x	x	x			x	x			x		AD7533A \diamond AD	(3312)	5
				x	x	x	x			x	x			x		AD7533J \diamond AD	(3312)	
				x	x	x	x			x	x			x		AD7533S \diamond \dagger AD	(3312)	
				x	x	x	x			x	x			x		MX7533A	Maxim	
				x	x	x	x			x	x			x		MX7533J	Maxim	
				x	x	x	x			x	x			x		MX7533S \dagger Maxim		
		0.8 *	30 *	x	x	x	x			x	x			x		AD7533J	Harris	10
				x	x	x	x			x	x			x		MP7533S \dagger MicroPwr		
				x	x	x	x			x	x			x		MP7533T \dagger MicroPwr		
		1	450	x	x	x	x			x	x			x		MP7633A	MicroPwr	15
				x	x	x	x			x	x			x		MP7633J	MicroPwr	
				x	x	x	x			x	x			x		MP7633S \dagger MicroPwr		
		1.5 *	300		x			x		x	x		x			DAC06F	AD	(3314)
			350	x						x	x		x			DAC03CD	AD	
		500 *	24	x						x	x			x		AD7520J	National	20
				x						x	x			x		AD7520S \dagger National		
				x						x	x			x		DAC1022 \dagger National		
				x						x	x			x		DAC1022C	National	
				x						x	x			x		7520	Rochester	
	3	0.225	300			x	x						x			DAC100D \ddagger AD	(3312)	25
		1.5 *	350		x			x		x	x		x			DAC06B	AD	(3314)
	4	0.2	—		x	x				x	x		x			DAC10G	AD	(3312)
		1.5 *	350	x						x	x		x			DAC03DD	AD	
10 Plus Sign	1/2	1.5 *	500	x					x	x	x		x			DAC210E	AD	(3314)
	6	300		x												μ PC610	NEC	
	1	1.5 *	300	x					x	x	x		x			DAC210G	AD	(3314)
			350	x					x	x	x		x			DAC02AC	AD	(3314)
			500	x					x	x	x		x			DAC210F	AD	(3314)
	2	1.5 *	300	x					x	x	x		x			DAC02CC	AD	(3314)
			350	x					x	x	x		x			DAC05A \dagger AD	(3314)	30
	4	2.5 *	350	x					x	x	x		x			DAC02DD	AD	
10 (triple)	1	20	400	x												ADV7121	AD	35
				x												ADV7122	AD	
10 (video)	1/2	0.0125		x				x								ADV7121-80	AD	(3315)
		0.02		x				x								ADV7121-50	AD	(3315)
				x				x								ADV7122-50	AD	(3315)
				x				x								ADV7121-35	AD	(3315)
				x				x								ADV7122-35	AD	(3315)
		0.0125		x				x								ADV7122-80	AD	(3315)
10 Video Digital Converter	1/2	0.015	2340	x									x			HDD1015	AD	45
				x									x			HDD1015C	AD	
				x									x			HDD1015M \dagger AD		
		75 MHz		x								x	x	x		SP9770	GEC Plessey	
10 (w/8-bit A/D)	1/2	0.05		x									x			KSV3110-10	Samsung	
11 Plus Sign Dynamic Range (7-Bit plus sign format)	1/2 step	0.5	207							x	x	x		x		DAC88E	AD	
										x	x	x		x		DAC89E	AD	(3312)
12	2/3	6 *	360 *	x		x	x			x	x					HSDAC87AT \dagger Sipex-HSD	(Continued)	

 \dagger Mil Temp Range (-55° to 125°C) \ddagger High Rad Resistance

*Typical Value

*Behavioral Model Available

 \diamond Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/4	0.01								x	x				x	AD667K \diamond AD	(3314)	(Cont'd)
		0.25	345	x	x					x	x		x			AD565AK AD	(3312)	
				x	x					x	x		x			AD565AT \uparrow AD	(3312)	
				x	x					x	x		x			MX565AK Maxim		5
				x	x					x	x		x			MX565AT \uparrow Maxim		
				x	x					x	x		x			MN565AK MicroNet		
				x	x					x	x		x			MN565AT \uparrow MicroNet		
		0.3		x												HI1-0562A-2 \uparrow Harris		
				x												HI1-0562A-5 Harris		
				x												HI1-0562A/883 \uparrow Harris		10
			270	x						x	x			x		DAC1266A National		
				x						x	x			x		DAC1266AC National		
			345	x						x	x		x	x		DAC1265A National		
				x						x	x		x	x		DAC1265AC National		
			800			x	x	x		x	x					TPDAC80I TeledyneC		15
	0.35	300		x	x					x	x			x		MX566AK Maxim		
				x	x					x	x			x		MX566AT \uparrow Maxim		
	0.4	300		x	x					x	x		x	x		AD566AK AD	(3312)	
				x	x					x	x		x	x		AD566AT \uparrow AD	(3312)	
				x	x					x	x		x			AD566K AD		20
				x	x					x	x		x			AD566T \uparrow AD		
				x	x					x	x		x			MCE566AK MCE		
				x	x					x	x		x	x		MCE566K MCE		
			345	x	x					x	x		x			AD565K AD		
				x	x					x	x		x			AD565T \uparrow AD		25
				x	x					x	x		x			MCE565K MCE		
				x	x					x	x		x			μ A565TM \uparrow National		
			780	x						x	x			x		HI562A-2 \uparrow Harris		
				x						x	x			x		HI562A/883 Harris		
	0.5	312 *		x	x	x	x	x		x	x	x		x		AM6012C AMD		30
		375		x	x					x	x		x			HI565AKD-5 Harris		
				x	x					x	x		x			HI565ATD-5 \uparrow Harris		
		495		x	x					x	x		x		x	AD567K AD		
	1 *	500		x	x						x					MP1210H MicroPwr		35
				x	x						x					MP1210R \uparrow MicroPwr		
				x	x						x					MP1210Z MicroPwr		
	1.5 *			x	x					x	x			x		PM562A \uparrow AD		
	1.5	465		x	x					x	x			x		AD562S/BIN AD	(3313)	
	1.5 *	465		x	x					x	x			x		DM562G AD		
	1.5	475		x	x					x	x		x			AD563K/BIN AD	(3313)	40
				x	x					x	x		x			AD563S/BIN \uparrow AD	(3313)	
				x	x					x	x		x			AD563T/BIN \uparrow AD	(3313)	
		800				x	x	x		x	x					TPDAC80V TeledyneC		
	4	800		x	x					x	x		x		x	DAC811B \diamond Burr-Brown	(3418)	
				x	x					x	x		x		x	DAC811K \diamond Burr-Brown	(3418)	45
				x	x					x	x		x		x	DAC811S \diamond \uparrow Burr-Brown	(3418)	
	6	450				x	x			x	x		x		x	HSDAC87AUB \uparrow Sipex-HSD		
	1/3	6 *	360 *	x		x	x			x	x					HSDAC87AU \uparrow Sipex-HSD		
	1/2			x	x		x			x				x		AD664 AD	(3317)	
				x	x		x			x						AD7245A AD	(3314)	50
	—	35			x			x	x	x					x	AD7545C \diamond AD	(3313)	(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2 LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	—	35		x			x	x	x					x	AD7545GC \diamond AD	(Cont'd) (3313)	
					x			x	x	x					x	AD7545GL \diamond AD	(3313)	
					x			x	x	x					x	AD7545GU \diamond AD	(3313)	
					x			x	x	x					x	AD7545L \diamond AD	(3313)	
					x			x	x	x					x	AD7545U \diamond AD	(3313)	5
		225														DAC8565 \uparrow Raytheon		
	1/2	20	x	x	x	x				x	x				x	MP7541T \uparrow MicroPwr		
	0.01									x	x				x	AD667J \diamond AD	(3314)	
										x	x				x	AD667S \diamond AD		
	0.02	1200	x							x						TDC1112 \uparrow TRWLSI		10
	0.03	300	x							x	x		x			OPT104AC Optimum Semi		
			x							x	x		x		x	OPT105AC Optimum Semi		
	0.035									x	x					AD568J AD	(3312)	
										x	x					AD568K AD	(3312)	
										x	x					AD568S \uparrow AD	(3312)	15
		855	x	x						x	x					HDS1250 AD		
			x	x						x	x					HDS1250M \uparrow AD		
	0.04	300	x							x	x		x			CAT104 Catalyst Semi		
			x							x	x		x		x	CAT105 Catalyst Semi		
		1160	x	x								x	x			DAC63BM Burr-Brown	(3417)	20
			x	x								x	x			DAC63CG Burr-Brown	(3417)	
			x	x								x	x			DAC63CM Burr-Brown	(3417)	
			x	x								x	x			DAC63T \uparrow Burr-Brown	(3417)	15
	0.045	1160	x	x								x	x			DAC63BG Burr-Brown	(3417)	20
	0.05		x													DACDG12B1 Datel		25
			x													DACDG12B2 Datel		
	—				x	x				x		x	x			ADH030II-12 ILC-DDC		
	780		x	x						x			x			DACHF12BC Datel		
			x	x						x			x			DACHF12BM Datel		
	800		x	x						x	x					HS9393B \uparrow Sipex-HSD		30
			x	x						x	x					HS9393C Sipex-HSD		
			x	x						x	x					HS9394B \uparrow Sipex-HSD		
			x	x						x	x					HS9394C Sipex-HSD		
	0.06	395	x	x						x			x			4065 \uparrow TeledyneC		35
			x	x						x			x			4065HR \uparrow TeledyneC		
	0.065	1600			x	x				x			x			DAC812C Burr-Brown		
			x	x						x			x			DAC812C MicroNet		
			x	x						x			x			DAC812C/B MicroNet		
	0.1	645	x	x						x						4065HR \uparrow TeledyneC		40
	0.18	—	x	x						x	x				x	AD7544BG AD		
			x	x						x	x				x	AD7544GK AD		
			x	x						x	x				x	AD7544GT \uparrow AD		
			x	x						x	x				x	AD7544T \uparrow AD		
	0.25	2.5	x	x	x	x				x	x				x	DAC8043A \uparrow AD	(3312)	45
			x	x	x	x				x	x				x	DAC8043E AD	(3312)	
			x	x	x	x				x	x				x	DAC8043G AD	(3312)	
		345	x	x						x	x		x			AD565AJ AD	(3312)	
			x	x						x	x		x			AD565AS \uparrow AD	(3312)	
			x	x						x	x		x			MX565AJ Maxim		
			x	x						x	x		x			MX565AS \uparrow Maxim		50
			x	x						x	x		x			MCE565AJ MCE		

(Continued)

 \uparrow Mil Temp Range (-55° to 125°C) \dagger High Rad Resistance

*Typical Value

*Behavioral Model Available

 \diamond Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	0.25	345	x	x					x	x		x			MCE565AS \uparrow MCE		(Cont'd)
				x	x					x	x		x			MN565AJ MicroNet		
				x	x					x	x		x			MN565AS \uparrow MicroNet		
			900			x	x			x			x			4080 \uparrow TeledyneC		5
						x	x			x			x			4080HR \uparrow TeledyneC		
						x	x			x			x			4081 TeledyneC		
						x	x			x			x			4081HR \uparrow TeledyneC		
						x	x			x			x			4082 TeledyneC		
						x	x			x			x			4082HR \uparrow TeledyneC		
		0.3 *				x	x			x			x			DAC85H-CBI-I Burr-Brown		10
						x	x			x			x			DAC87H-CBI-I \uparrow Burr-Brown	(3418)	
		0.3	270	x						x	x			x		DAC1266L National		
				x						x	x			x		DAC1266LC National		
			345	x						x	x		x	x		DAC1265L National		15
				x						x	x		x	x		DAC1265LC National		
			450	x	x					x			x			4024 TeledyneC		
			480	x			x	x					x			DAC80-CBI-I MicroNet		
				x			x	x					x			DAC85-CBI-V MicroNet		
			1000			x				x			x			HI5680I Harris		20
						x				x	x		x			HI5685I Harris		
						x	x	x			x		x			4087 TeledyneC		
			1200			x	x	x			x		x			DAC80Z-CBI-I Burr-Brown		
		0.3/1.5 *	800 *			x	x	x		x			x			DAC800-CBI-I Burr-Brown		
						x	x	x		x			x			DAC800-CBI-V Burr-Brown		
		0.3/3 *	480			x	x	x		x			x			DAC80-CBI-I Burr-Brown	(3418)	25
			850			x	x	x		x			x			ADDAC87/CBI \uparrow AD	(3312)	
						x	x	x		x			x			DAC85-CBI MicroNet		
			925			x	x	x		x			x			ADDAC80/CBI AD	(3312)	
						x	x	x		x			x			ADDAC85/CBI \uparrow AD	(3312)	
						x	x	x		x			x			ADDAC85C/CBI AD		30
		0.35	300	x	x					x	x			x		MX566AJ Maxim		
				x	x					x	x			x		MX566AS \uparrow Maxim		
		0.4	—			x	x	x		x						HIDAC80 Harris		
			300	x	x					x	x		x	x		AD566AJ AD	(3312)	35
				x	x					x	x		x	x		AD566AS \uparrow AD	(3312)	
				x	x					x	x		x			AD566J AD		
				x	x					x	x		x			AD566S \uparrow AD		
				x	x					x	x		x			MCE565J MCE		
				x	x					x	x		x	x		MCE566AJ MCE		
				x	x					x	x		x			MCE566J MCE		40
			345	x	x					x	x		x			AD565J AD		
				x	x					x	x		x			AD565S \uparrow AD		
				x	x					x	x		x			μ A565SM \uparrow National		
			400	x	x	x	x			x	x	x		x		μ PC6012 NEC		
			465	x	x					x						4068 \uparrow TeledyneC		45
			780	x						x	x			x		HI562A-5 Harris		
		0.5								x	x			x		HDAC7541ZAC Signal Proc		
										x	x			x		HDAC7541ZAI Signal Proc		
										x	x			x		HDAC7541ZAM \uparrow Signal Proc		
														x		HDAC7542AAC Signal Proc		50
														x		HDAC7542AAI Signal Proc		

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	0.5												x		HDAC7542AAM † Signal Proc	(Cont'd)	
														x		HDAC7543AAC	Signal Proc	
														x		HDAC7543AAI	Signal Proc	
														x		HDAC7543AAM † Signal Proc		
														x		HDAC7545AAC	Signal Proc	5
														x		HDAC7545AAI	Signal Proc	
														x		HDAC7545AAM † Signal Proc		
		312 *		x	x	x	x	x		x	x	x		x		AM6012M	† AMD	
				x	x	x	x	x		x	x	x		x		MCE6012C	MCE	
				x	x	x	x	x		x	x	x		x		MCE6012M	† MCE	10
		375		x	x					x	x		x			HI565AJD-5	Harris	
				x	x					x	x		x			HI565ASD-5	† Harris	
		495		x	x					x	x		x		x	AD567J	AD	
				x	x					x	x		x		x	AD567S	† AD	
		0.5 *	1300			x	x			x	x					HDH1205	AD	15
						x	x			x	x					HDH1205M	† AD	
		0.6	1.5	x	x	x	x	x		x	x			x		DAC7541AK	Burr-Brown (3418)	
				x	x	x	x	x		x	x			x		DAC7541AT	† Burr-Brown (3418)	
		0.6 *	30	x	x					x	x			x		PM7541AA	† AD (3312)	
				x	x					x	x			x		PM7541AB	AD (3312)	20
				x	x					x	x			x		PM7541AE	AD (3312)	
				x	x					x	x			x		PM7541AF	◊ AD (3312)	
				x	x					x	x			x		PM7541AG	AD (3312)	
				x	x					x	x			x		PM7541AH	AD (3312)	
		0.65	1500		x					x			x			4072	TeledyneC	25
		0.7	2400			x		x								DAC-DG12	Datel	
		0.75 *	555	x	x	x				x	x		x			HI5690V	Harris	
				x	x	x				x	x		x			HI5695V	Harris	
		0.8	10	x	x					x	x			x	x	DAC7800	◊ Burr-Brown (3418)	
				x	x					x	x			x	x	DAC7801	◊ Burr-Brown (3418)	30
				x	x					x	x			x	x	DAC7802	◊ Burr-Brown (3418)	
		1	10	x	x	x	x			x	x			x		DAC8221E	AD (3318)	
				x	x	x	x			x	x			x		DAC8221G	AD (3318)	
				x						x	x			x	x	MAX543A	◊† Maxim	
				x	x	x	x			x	x			x	x	MP7680AL	◊ MicroPwr	35
				x	x	x	x			x	x			x	x	MP7680AU	† MicroPwr	
				x	x	x	x			x	x			x	x	MP7680L	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7680U	† MicroPwr	
		1 *	11 *	x	x	x	x			x	x			x	x	MP7622K	MicroPwr	
		1	20 *	x	x	x	x			x	x			x		AD7541B	◊ AD	40
				x	x	x	x			x	x			x		AD7541K	◊ AD	
				x	x	x	x			x	x			x		AD7541T	◊† AD	
				x	x	x	x			x	x			x		AD7541B	Harris	
				x	x	x	x			x	x			x		AD7541K	Harris	
				x	x	x	x			x	x			x		AD7541T	Harris	45
		20		x	x	x	x			x	x			x		MX7541AB	Maxim	
				x	x	x	x			x	x			x		MX7541AK	Maxim	
				x	x	x	x			x	x			x		MX7541AT	† Maxim	
				x	x	x	x			x	x			x		MX7541B	Maxim	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Setting Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	1	20														(Cont'd)	
				x	x	x	x			x	x			x		MX7541K	Maxim	
				x	x	x	x			x	x			x		MX7541T	† Maxim	
	1 *	20 *		x	x						x					MP1208B	MicroPwr	
				x	x						x					MP1208K	MicroPwr	
				x	x						x					MP1208T	† MicroPwr	5
				x	x						x				x	MP1230B	MicroPwr	
				x	x						x				x	MP1230K	MicroPwr	
				x	x						x				x	MP1230T	† MicroPwr	
	1	20		x	x	x	x			x	x			x		MP7541B	MicroPwr	10
				x	x	x	x			x	x			x		MP7541K	MicroPwr	
	1 *	20 *		x	x						x			x		MP7542B	MicroPwr	
				x	x						x			x		MP7542K	MicroPwr	
				x	x						x			x	x	MP7542T	† MicroPwr	
				x	x						x			x	x	MP7543B	MicroPwr	15
				x	x						x			x	x	MP7543K	MicroPwr	
				x	x						x			x	x	MP7543T	† MicroPwr	
	1	20 *		x	x	x	x			x	x			x		MP7621B	MicroPwr	20
				x	x	x	x			x	x			x		MP7621K	MicroPwr	
				x	x	x	x			x	x			x		MP7621T	† MicroPwr	
				x	x	x	x			x	x			x		MP7623B	MicroPwr	
		30		x	x					x	x				x	PM7541A	◊† AD	
				x	x					x	x				x	PM7541E	AD	
				x	x					x	x				x	PM7541G	AD	
				x	x					x	x			x	x	PM7545B	AD (3313)	
				x	x					x	x			x	x	PM7545F	◊ AD (3313)	25
				x	x					x	x			x	x	PM7545H	AD (3313)	
				x	x					x	x			x	x	PM7645B	AD (3313)	
				x	x					x	x			x	x	PM7645E	AD (3313)	
				x	x					x	x			x	x	PM7645F	◊ AD (3313)	
				x	x					x	x			x	x	PM7645H	AD (3313)	30
				x						x	x			x	x	MAX7645AC	◊ Maxim	
				x						x	x			x	x	MAX7645AE	Maxim	
				x						x	x			x	x	MAX7645AM	† Maxim	
				x						x	x				x	MX7545AB	Maxim	
				x						x	x				x	MX7545AC	Maxim	35
				x						x	x				x	MX7545AK	◊ Maxim	
				x						x	x				x	MX7545AL	◊ Maxim	
				x						x	x				x	MX7545AT	† Maxim	
				x						x	x				x	MX7545AU	† Maxim	
				x	x	x	x			x	x			x	x	MP1230AB	MicroPwr	40
				x	x	x	x			x	x			x	x	MP7541AB	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7541AK	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7541AT	† MicroPwr	
				x						x	x			x		DAC1208	National	
				x						x	x			x		DAC1218	National	45
				x						x	x			x		DAC1230	National	
	1 *	40 *		x	x	x	x			x	x			x	x	MP7622B	MicroPwr	
	1	45		x	x					x	x			x	x	PM7548A	† AD (3313)	
				x	x					x	x			x	x	PM7548B	† AD (3313)	
				x	x					x	x			x	x	PM7548E	AD (3313)	50
				x	x					x	x			x	x	PM7548F	AD (3313)	
				x	x					x	x			x	x	PM7548G	AD (3313)	
				x	x					x	x			x	x	PM7548H	AD (3313)	
				x						x	x			x	x	MX7548B	Maxim	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	1	45															(Cont'd)
				x						x	x			x	x	MX7548K	◊ Maxim	
				x						x	x			x	x	MX7548T	† Maxim	
			50	x	x					x	x			x		DAC8012A	† AD (3313)	5
				x	x					x	x			x		DAC8012E	AD (3313)	
				x	x					x	x			x		DAC8012G	AD (3313)	
				x	x					x	x			x		DAC8212A	† AD	
				x	x					x	x			x		DAC8212E	AD	
				x	x					x	x			x		DAC8212G	AD	
			100	x			x	x								DAC8143A	AD (3312)	10
				x			x	x								DAC8143E	AD (3312)	
			450	x		x	x			x	x			x		PM7542A	† AD (3312)	15
				x		x	x			x	x			x		PM7542B	† AD (3312)	
				x		x	x			x	x			x		PM7542E	AD (3312)	
				x		x	x			x	x			x		PM7542F	AD (3312)	
				x		x	x			x	x			x		PM7542G	AD (3312)	
				x		x	x			x	x			x		PM7542H	AD (3312)	
				x		x	x			x	x			x		PM7543A	† AD (3312)	
				x		x	x			x	x			x		PM7543B	† AD (3312)	
				x		x	x			x	x			x		PM7543E	AD (3312)	
				x		x	x			x	x			x		PM7543F	AD (3312)	20
				x		x	x			x	x			x		PM7543G	AD (3312)	
				x		x	x			x	x			x		PM7543H	AD (3312)	
				x	x	x	x			x	x			x		MP7623K	MicroPwr	25
				x	x	x	x			x	x			x		MP7623T	† MicroPwr	
				x	x					x	x					TP7541B	TeledyneC	
				x	x					x	x			x		TP7541K	TeledyneC	
				x	x			x		x	x			x		TP7541T	† TeledyneC	
				x	x					x						4085	† TeledyneC	
		1 *	800	x	x					x	x		x		x	DAC811A	◊ Burr-Brown (3418)	30
				x	x					x	x		x		x	DAC811R	◊ Burr-Brown (3418)	
			1000	x	x	x	x			x	x			x	x	MP7622T	† MicroPwr	
		1.0	30	x	x					x	x			x	x	PM7545A	† AD (3313)	35
				x	x					x	x			x	x	PM7545E	AD (3313)	
				x	x					x	x			x	x	PM7545G	AD (3313)	
				x	x					x	x			x	x	PM7645A	† AD (3313)	
				x	x					x	x			x	x	PM7645G	AD (3313)	
		1.5								x	x					AD7549K	◊ AD (3318)	
		1.5 *		x	x					x	x			x		PM562B	† AD	40
				x	x					x	x			x		PM562F	AD	
				x	x					x	x			x		PM562H	AD	
		1.5	30	x						x	x			x	x	MX7537B	Maxim	45
				x						x	x			x	x	MX7537C	Maxim	
				x						x	x			x	x	MX7537K	◊ Maxim	
				x						x	x			x	x	MX7537L	◊ Maxim	
				x						x	x			x	x	MX7537T	† Maxim	
				x						x	x			x	x	MX7537U	† Maxim	
				x						x	x			x	x	MX7547B	Maxim	
				x						x	x			x	x	MX7547C	Maxim	
				x						x	x			x	x	MX7547K	◊ Maxim	
				x						x	x			x	x	MX7547L	◊ Maxim	50
				x						x	x			x	x	MX7547T	† Maxim	
				x						x	x			x	x	MX7547U	† Maxim	
		1.5 *	465	x	x					x	x			x		AD562K/BIN	AD	
			475	x	x					x	x		x			AD5631/BIN	AD (3313)	(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	1.5	1000			x	x	x			x		x			4086	TeledyneC	(Cont'd)
		2	1.5	x			x	x			x			x	x	DAC7545	Burr-Brown	(3418)
		12.5		x	x	x	x			x	x			x	x	MP7543GB	MicroPwr	
				x	x	x	x			x	x			x	x	MP7543GK	MicroPwr	
				x	x	x	x			x	x			x	x	MP7543GT	† MicroPwr	5
		30		x	x					x	x			x	x	MX7545C	Maxim	
				x	x				x	x				x	x	MX7545GC	Maxim	
				x	x				x	x				x	x	MX7545GL	Maxim	
				x	x				x	x				x	x	MX7545GU	† Maxim	
				x	x				x	x				x	x	MX7545L	Maxim	10
				x	x					x	x			x	x	MX7545U	† Maxim	
				x	x	x	x			x	x			x	x	MP7545GC	MicroPwr	
				x	x	x	x			x	x			x	x	MP7545GL	MicroPwr	
				x	x	x	x			x	x			x	x	MP7545GU	† MicroPwr	
		40		x	x					x	x					AD7542B	◊ AD	(3312)
				x	x					x	x					AD7542K	◊ AD	(3312)
				x	x					x	x					AD7542T	◊† AD	(3312)
				x						x						AD7543B	◊ AD	(3312)
				x						x						AD7543K	◊ AD	(3312)
				x	x					x	x					MX7542B	Maxim	20
				x	x					x	x					MX7542GB	Maxim	
				x	x					x	x					MX7542GK	Maxim	
				x	x					x	x					MX7542GT	† Maxim	
				x	x					x	x					MX7542K	Maxim	
				x	x					x	x					MX7542T	† Maxim	25
				x	x					x						MX7543B	Maxim	
				x	x					x						MX7543GB	Maxim	
				x	x					x						MX7543GK	Maxim	
				x	x					x						MX7543GT	† Maxim	
				x	x					x						MX7543K	Maxim	30
				x	x					x						MX7543T	† Maxim	
				x	x	x	x			x	x				x	MP7542GK	MicroPwr	
				x	x	x	x			x	x				x	MP7542GT	† MicroPwr	
		350														DAC4881	† Raytheon	
		375 *		x	x	x				x	x					HS3120B-2	† Sipex-HSD	35
				x	x	x				x	x					HS3120C-2	Sipex-HSD	
		375		x	x					x			x			4058	† TeledyneC	
		450		x	x			x	x	x					x	MP7545C	MicroPwr	
				x	x			x	x	x					x	MP7545L	MicroPwr	
				x	x			x	x	x					x	MP7545U	† MicroPwr	40
				x	x	x	x			x	x					MP7645C	MicroPwr	
				x	x	x	x			x	x					MP7645L	MicroPwr	
				x	x	x	x			x	x					MP7645U	† MicroPwr	
		630		x	x					x						DACHK-12	Adv Analog	
		1900				x	x			x						HDD1206J	AD	45
						x	x			x						HDD1206S	† AD	
		2.5	—	x	x					x	x		x			DAC338B-12-2	Sipex-HSD	
		645		x	x					x			x			4058HR	† TeledyneC	
		3		x			x	x					x			HI-DAC85V-4	Harris	
				x			x	x					x			HI-DAC85V-5	Harris	50
		30		x	x					x	x				x	DAC331B-12	† Sipex-HSD	
				x	x					x	x					DAC331C-12	Sipex-HSD	
		380				x	x	x		x			x			DAC-HZ12BMC	Datel	
						x		x		x			x			DACHZB/883B	Datel	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	3															(Cont'd)	
			480	x			x	x					x			DAC80-CBI-V	MicroNet	
				x			x	x					x			DAC85-CBI-I	MicroNet	
			630	x	x					x			x			DACHK12BGC	Adv Analog	
				x	x					x			x			DACHK12BMM	† Adv Analog	
			675			x	x			x			x			DAC870U	◊ Burr-Brown	5
						x	x			x			x			DAC870V	◊† Burr-Brown	
			700	x	x					x			x		x	DACHKB/883B	Datel	
								x		x			x		x	DACHKB2/883B	Datel	
				x				x		x			x			DACHK12BMC	Datel (3441)	10
				x				x		x			x			DACHK12BMC-2	Datel (3441)	
			850			x	x			x			x			DAC80	MicroNet	
						x	x	x		x			x			MNDAC87	† MicroNet	
			900	x	x					x			x		x	DACHK12BC	Datel	
								x		x			x		x	DACHK12BC-2	Datel	
				x	x					x			x		x	DACHK12BM	Datel	15
								x		x			x		x	DACHK12BM-2	Datel	
			1000			x				x			x			HI5680V	Harris	
			1050			x	x			x			x			DACHZ12BC	Datel	
						x	x			x			x			DACHZ12BM	Datel	
3.5			410	x	x					x	x		x	x	x	DAC2814	Burr-Brown (3418)	20
				x	x					x	x		x	x	x	DAC2815	Burr-Brown (3418)	
			465	x	x					x	x			x		AD562A/BCD	AD (3313)	
				x	x					x	x			x		AD562A/BIN	AD (3313)	
			753	x	x					x	x		x	x	x	DAC4814	Burr-Brown (3418)	
				x	x					x	x		x	x	x	DAC4815	Burr-Brown (3418)	25
4			270	x	x			x		x	x		x		x	DAC813	◊ Burr-Brown (3418)	
			300	x	x					x	x		x		x	DAC336B-12	† Sipex-HSD	
				x	x					x	x		x		x	DAC336C-12	Sipex-HSD	
			390	x	x			x		x	x		x		x	DAC667	◊ Burr-Brown (3418)	
			480			x	x	x			x		x			DAC80-CBI-V	Burr-Brown (3418)	30
						x	x	x			x		x			DAC80Z-CBI-V	Burr-Brown	
						x	x			x			x			DAC85H-CBI-V	Burr-Brown (3418)	
						x	x			x			x			DAC87H-CBI-V	† Burr-Brown (3418)	
			975			x	x			x			x		x	DACHK	† MicroNet	35
				x			x	x					x			DACHK-2	MicroNet	
				x			x	x					x			DACHK-2E	MicroNet	
				x			x	x					x			DACHK-2H	† MicroNet	
				x			x	x					x			DACHK-2H/B	† MicroNet	
			1955	x	x					x	x			x	x	AD392	AD (3316)	40
5			135	x	x					x	x		x		x	MAX507A	◊† Maxim	
				x	x					x	x		x		x	MAX508A	◊ Maxim	
			200	x	x					x	x			x	x	MAX501A	◊ Maxim	
				x	x					x	x			x	x	MAX502A	◊† Maxim	
			400							x	x			x	x	HS33806	† Sipex-HSD	
			450 *	x	x					x	x		x			HS9338-2	Sipex-HSD	45
5 *			525 *			x	x			x	x		x			MN3850	† MicroNet	
						x	x			x	x		x			MN3850H	MicroNet	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Setting Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1/2	5 *	675 *			x	x			x			x		x	MN3860	MicroNet	(Cont'd)
						x	x			x			x		x	MN3860H	† MicroNet	
		5	750	x	x					x			x			4025	TeledyneC	
			1000		x	x							x			HS3860B	† Sipex-HSD	
					x	x							x			HS3860C	Sipex-HSD	5
		6	360	x	x		x			x	x		x	x	x	MX7245	o† Maxim	
			450			x	x			x	x		x		x	HSDAC87ATB	† Sipex-HSD	
			630	x	x					x	x		x		x	DAC88	† Adv Analog	
		7	750	x		x	x									DAC87	MicroNet	
				x		x	x									DAC87H	† MicroNet	10
				x		x	x									DAC87H/B	† MicroNet	
			1000			x	x			x			x		x	AD3860K	AD	
						x	x			x			x		x	AD3860S	† AD	
		8	—	x						x	x					AD390K	AD (3316)	
			375			x	x			x			x			MN3348	MicroNet	15
						x	x			x			x			MN3348H	† MicroNet	
		10	x	x	x	x	x			x	x			x		DAC8221A	† AD (3318)	
			375			x	x			x			x			MN3349	MicroNet	
						x	x			x			x			MN3349H	† MicroNet	
			760			x	x			x			x		x	DAC88	† MicroNet	20
						x	x		x				x		x	MN3660	o† MicroNet	
			1200			x	x			x			x			DAC71	MicroNet	
		15			x					x	x			x		AD394	AD (3317)	
					x					x	x			x		AD394K	AD (3317)	
				x						x	x			x		AD395	AD	25
				x						x	x			x		AD395K	AD (3317)	
			300	x	x					x	x		x			DAC349B-12	† Sipex-HSD	
				x	x					x	x		x			DAC349C-12	Sipex-HSD	
				x	x					x	x		x			DAC9349-12	Sipex-HSD	
		20	150			x	x			x	x		x			DAC347LPB-12U	† Sipex-HSD	30
						x	x			x	x		x			DAC347LPC-12B	Sipex-HSD	
						x	x			x	x		x			DAC347LPC-12U	Sipex-HSD	
						x	x			x	x		x			HAC347LPB-12B	† Sipex-HSD	
			355			x				x				x		MN3412	MicroNet	35
		25	175 *			x				x	x		x			DAC9356	Sipex-HSD	
		35	90			x				x			x			MN371	MicroNet	
						x				x			x			MN371H	† MicroNet	
			150				x			x	x		x			AD370J	AD	
							x			x	x		x			AD370K	AD	
							x			x	x		x			AD370S	† AD	40
						x				x	x		x			AD371J	AD	
		50	265				x			x	x		x			DAC356B-12	† Sipex-HSD	
							x			x	x		x			DAC356C-12	Sipex-HSD	
			908				x			x	x		x			DAC356LPB-12	† Sipex-HSD	
							x			x	x		x			DAC356LPC-12	Sipex-HSD	45
			1653			x	x					x	x			HDS1240E	AD	
						x	x					x	x			HDS1240EM	† AD	
		70	90				x			x	x		x			MN370	MicroNet	
							x			x	x		x			MN370H	† MicroNet	
		3/4	0.08	1600						x			x			DAC812B	Burr-Brown	50
			0.080	1600	x	x				x			x			DAC812B	MicroNet	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	3/4	0.080	1600	x	x					x			x			DAC812B/B	MicroNet	(Cont'd)
	2	1270		x	x	x	x	x								HI-DAC87V/883	† Harris	
	5	135		x	x					x	x		x		x	MAX507B	◊ Maxim	5
				x	x					x	x		x		x	MAX508B	◊ Maxim	
		200		x	x					x	x			x	x	MAX501B	◊† Maxim	
				x	x					x	x			x	x	MAX502B	◊† Maxim	
	6	450				x	x			x	x		x		x	HSDAC87ASB	† Sipex-HSD	
	7	975		x	x					x	x		x		x	DAC1201K-V	Burr-Brown (3418)	
	8	—		x						x	x					AD390J	AD	10
				x						x	x					AD390S	† AD (3316)	
				x						x	x					AD390T	† AD (3316)	
0.5	0.4	900				x	x									DAC87-CBI-I/B	† Burr-Brown	
	7	900				x	x			x			x			DAC87-CBI-V/B	† Burr-Brown	
1	—	35			x			x	x	x					x	AD7545B	◊ AD (3313)	15
					x			x	x	x					x	AD7545K	◊† AD (3313)	
					x			x	x	x					x	AD7545T	◊ AD (3313)	
	0.005	700		x								x		x	x	DAC-400	‡ AD	
	0.02	300		x						x	x		x		x	OPT506BC	Optimum Semi	
	0.025	900		x						x	x				x	CLC912	† Comlinear	20
	0.03			x				x								AD9712	AD (3312)	
				x				x								AD9712A	AD (3312)	
				x				x								AD9713	AD (3312)	
				x				x								AD9713A	AD (3312)	
		300		x						x	x		x			OPT104BC	Optimum Semi	25
				x						x	x		x		x	OPT105BC	Optimum Semi	
	0.035	300		x						x	x		x			AD568	† AD	
	0.05			x										x		AD668	AD (3312)	
	0.085			x									x	x		HDM1210	AD	
	0.18	—		x	x					x	x			x		AD7544S	AD	
	0.25	2.5		x	x	x	x			x	x			x	x	DAC8043F	AD (3312)	30
				x	x	x	x			x	x			x	x	DAC8043H	AD (3312)	
		375		x		x				x	x	x		x		DAC312E	AD (3312)	
	0.5			x												AD7568	AD (3318)	
										x	x			x		HDAC7541ZBC	Signal Proc	35
										x	x			x		HDAC7541ZBI	Signal Proc	
										x	x			x		HDAC7541ZBM	† Signal Proc	
														x		HDAC7542ABC	Signal Proc	
														x		HDAC7542ABI	Signal Proc	
														x		HDAC7542ABM	† Signal Proc	40
														x		HDAC7543ABC	Signal Proc	
														x		HDAC7543ABI	Signal Proc	
														x		HDAC7543ABM	† Signal Proc	
														x		HDAC7545ABC	Signal Proc	
														x		HDAC7545ABI	Signal Proc	
														x		HDAC7545ABM	† Signal Proc	45
	0.6	1.5		x	x	x	x	x		x	x			x		DAC7541AJ	Burr-Brown (3418)	
				x	x	x	x	x		x	x			x		DAC7541AS	† Burr-Brown (3418)	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1	1	10	x	x	x	x			x	x			x	x	DAC8143F \diamond AD (3312)	(Cont'd)	
				x	x	x	x			x	x			x		DAC8221F \diamond AD (3318)		
				x	x	x	x			x	x			x		DAC8221H AD (3318)		
				x						x	x			x	x	MAX543B \diamond \uparrow Maxim		
				x	x	x	x			x	x			x	x	MP7680K \diamond MicroPwr		5
				x	x	x	x			x	x			x	x	MP7680T \uparrow MicroPwr		
		20 *		x	x	x	x			x	x			x		AD7541A \diamond AD (3312)		
				x	x	x	x			x	x			x		AD7541J \diamond AD		
				x	x	x	x			x	x			x		AD7541A Harris		
				x	x	x	x			x	x			x		AD7541J Harris		10
		20		x	x	x	x			x	x			x		MX7541A Maxim		
				x	x	x	x			x	x			x		MX7541AA Maxim		
				x	x	x	x			x	x			x		MX7541AJ Maxim		
				x	x	x	x			x	x			x		MX7541AS \uparrow Maxim		
				x	x	x	x			x	x			x		MX7541J Maxim		15
				x	x	x	x			x	x			x		MX7541S \uparrow Maxim		
				x	x	x	x			x	x			x		MP7541A MicroPwr		
				x	x	x	x			x	x			x		MP7541J MicroPwr		
				x	x	x	x			x	x			x		MP7541S \uparrow MicroPwr		
	1 *	20 *		x	x						x			x		MP7542A MicroPwr		20
				x	x						x			x		MP7542J MicroPwr		
				x	x						x			x	x	MP7543A MicroPwr		
				x	x						x			x	x	MP7543J MicroPwr		
				x	x						x			x	x	MP7543S \uparrow MicroPwr		
	1	20 *		x	x	x	x			x	x			x		MP7621A MicroPwr		25
				x	x	x	x			x	x			x		MP7621J MicroPwr		
				x	x	x	x			x	x			x		MP7621S \uparrow MicroPwr		
				x	x	x	x			x	x			x		MP7623A MicroPwr		
				x	x	x	x			x	x			x		MP7623J MicroPwr		
				x	x	x	x			x	x			x		MP7623S \uparrow MicroPwr		30
		30		x	x					x	x			x	x	DAC8012B \uparrow AD (3313)		
				x	x					x	x			x	x	DAC8012F AD (3313)		
				x	x					x	x			x	x	DAC8012H \diamond AD (3313)		
				x	x					x	x			x	x	DAC8212B \uparrow AD		
				x	x					x	x			x	x	DAC8212F AD		35
				x	x					x	x			x	x	DAC8212H AD		
				x	x					x	x			x		PM7541B \uparrow AD		
				x	x					x	x			x		PM7541F AD		
				x	x					x	x			x		PM7541H AD		
				x						x	x			x	x	MAX7645BC \diamond Maxim		40
				x						x	x			x	x	MAX7645BE Maxim		
				x						x	x			x	x	MAX7645BM \uparrow Maxim		
				x	x	x	x			x	x			x	x	MP1231B MicroPwr		
				x	x	x	x			x	x			x	x	MP7541AA \diamond MicroPwr		
				x	x	x	x			x	x			x	x	MP7541AJ \diamond MicroPwr		45
				x	x	x	x			x	x			x	x	MP7541AS \uparrow MicroPwr		
				x						x	x			x		DAC1209 National		
				x						x	x			x		DAC1219 National		
				x						x	x			x		DAC1231 National		
	40 *			x	x	x	x			x	x			x	x	MP7622A MicroPwr		50
				x	x	x	x			x	x			x	x	MP7622J MicroPwr		
				x	x	x	x			x	x			x	x	MP7622S \uparrow MicroPwr		
	45			x						x	x			x	x	MX7548A Maxim		
				x						x	x			x	x	MX7548J \diamond Maxim		
				x						x	x			x	x	MX7548S \uparrow Maxim		55

(Continued)

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Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
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INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1	1	50 *	x	x	x	x			x	x			x		AD7541S \diamond † AD	(Cont'd)	
				x	x	x	x			x	x			x		AD7541L Harris		
				x	x	x	x			x	x			x		AD7541S † Harris		
			450	x	x					x	x					TP7541A TeledyneC		
				x	x					x	x			x		TP7541J TeledyneC		5
				x	x					x	x			x		TP7541S † TeledyneC		
		1 *	500	x	x						x					MP1209A MicroPwr		
				x	x						x					MP1209J MicroPwr		
				x	x						x					MP1209S † MicroPwr		10
				x	x						x				x	MP1231A MicroPwr		
				x	x						x				x	MP1231J MicroPwr		
				x	x						x				x	MP1231S † MicroPwr		
				x	x						x				x	MP1232H MicroPwr		
				x	x						x				x	MP1232R † MicroPwr		
				x	x						x				x	MP1232Z MicroPwr		15
		1	700					x		x					x	IR3K12 Sharp		
		1.5								x	x					AD7537 AD		
										x	x			x		AD7547J AD (3318)		
										x	x			x		AD7547K AD		
										x	x			x		AD7547S AD (3318)		20
										x	x					AD7549J \diamond AD (3318)		
			30	x						x	x			x	x	MX7537A Maxim		
				x						x	x			x	x	MX7537J \diamond Maxim		
				x						x	x			x	x	MX7537S † Maxim		
				x						x	x			x	x	MX7547A Maxim		25
				x						x	x			x	x	MX7547J \diamond Maxim		
				x						x	x			x	x	MX7547S † Maxim		
			450	x	x					x	x					MX7547 \diamond † Maxim		
		2	2	x	x					x	x			x	x	HS7584B \diamond † Sipex-HSD		
				x	x					x	x			x	x	HS7584C \diamond Sipex-HSD		30
			30	x	x					x	x			x	x	MX7545B Maxim		
				x	x					x	x			x	x	MX7545K Maxim		
				x	x					x	x			x	x	MX7545T † Maxim		
			40	x	x					x	x			x		AD7542A \diamond AD (3312)		
				x	x					x	x			x		AD7542J \diamond AD (3312)		35
				x	x					x	x			x		AD7542S \diamond† AD (3312)		
				x	x					x				x		AD7543A \diamond AD (3312)		
				x	x					x				x		AD7543J \diamond AD (3312)		
				x	x					x	x			x		MX7542A Maxim		
				x	x					x	x			x		MX7542J Maxim		40
				x	x					x	x			x		MX7542S † Maxim		
				x	x					x				x		MX7543A Maxim		
				x	x					x				x		MX7543J Maxim		
				x	x					x				x		MX7543S † Maxim		
				x	x					x	x			x	x	MP7542S \ddagger MicroPwr		45
			450	x			x	x		x	x				x	AD7545B Harris		
				x			x	x		x	x				x	AD7545K Harris		
				x	x			x	x	x				x	x	MP7545B MicroPwr		
				x	x			x	x	x				x	x	MP7545K MicroPwr		
				x	x			x	x	x				x	x	MP7545T † MicroPwr		50
				x	x	x	x			x	x			x		MP7645B MicroPwr		
				x	x	x	x			x	x			x		MP7645K MicroPwr		
				x	x	x	x			x	x			x		MP7645T † MicroPwr		
		2.5	—	x	x					x	x			x		DAC338B-12-1 Sipex-HSD		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ S	Power Dis. \pm 1/2LSB mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	1	3		x				x								AD662	AD	(Cont'd)
				x									x			AD7242	AD	(3316)
		4		x							x					AD7848	AD	(3314)
			300	x	x					x	x		x	x	x	AD767	† AD	(3314)
			800	x	x								x		x	DAC811J	◊ Burr-Brown	(3418)
		5		x							x					AD7845	AD	(3314)
				x							x					MX7845	◊† Maxim	
			450 *	x	x					x	x		x			HS9338-1	Sipex-HSD	
			690			x				x	x			x	x	SP9345	◊† Sipex-HSD	
		6 *	360 *	x		x	x			x	x					HSDAC87AS	† Sipex-HSD	
		10		x									x			AD7233	AD	(3314)
				x									x			AD7243	AD	(3314)
				x												DAC8413	AD	(3316)
			10	x												DAC8512	AD	
			65	x	x				x	x	x		x	x	x	AD7248	† AD	(3314)
				x	x				x	x	x		x	x	x	AD7248A	† AD	(3314)
				x	x		x			x	x			x	x	MX7248	◊† Maxim	
		15	690			x					x				x	SP9344	† Sipex-HSD	
		20 *	500	x	x					x	x		x		x	DAC9377-16-5	Sipex-HSD	
		35	150			x				x	x		x			AD371K	AD	
						x				x	x		x			AD371S	† AD	
		550 *	30	x	x					x	x					AD7240K	AD	
				x	x					x	x					AD7240T	† AD	
	1 1/4	0.1	10000		x			x			x		x	x		ADC600K	Burr-Brown	
	1/2	2	40	x	x	x	x			x	x			x	x	MP7542GB	† MicroPwr	
	1 1/2	550 *	30	x	x					x	x					AD7240J	AD	
				x	x					x	x					AD7240S	† AD	
	2	—	35		x			x	x	x					x	AD7545A	◊ AD	(3313)
					x			x	x	x					x	AD7545J	◊ AD	(3313)
					x			x	x	x					x	AD7545S	◊† AD	(3313)
	0.05	—				x	x			x		x	x			ADH0301I-10	ILC-DDC	
	0.25	375		x		x				x	x	x		x		DAC312B	† AD	(3312)
				x		x				x	x	x		x		DAC312F	AD	(3312)
				x		x				x	x	x		x		DAC312H	AD	(3312)
	0.25 *	473		x	x	x		x		x	x			x		HA17012B	Hitachi	
	0.5	10 *		x						x	x			x		DAC1220	† National	
				x						x	x			x		DAC1220C	National	
	0.5 *	20 *		x	x	x	x			x	x			x		AD7521L	◊ AD	
				x	x	x	x			x	x			x		AD7521U	◊† AD	
				x	x	x	x			x	x			x		AD7521L	Harris	
				x	x	x	x			x	x			x		AD7531L	Harris	
	0.5	20		x	x	x	x			x	x			x		MX7521L	Maxim	
				x	x	x	x			x	x			x		MX7521U	† Maxim	
				x	x	x	x			x	x			x		MX7531L	Maxim	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7521L	MicroPwr	
				x	x	x	x			x	x			x		MP7521U	† MicroPwr	
				x	x	x	x			x	x			x		MP7531L	MicroPwr	
		40 *		x	x	x	x			x	x			x	x	MP7622H	MicroPwr	
				x	x	x	x			x	x			x	x	MP7622R	† MicroPwr	
				x	x	x	x			x	x			x	x	MP7622Z	MicroPwr	
	0.5	397		x	x	x		x		x	x	x		x		AM6012	Signetics	
	1	10		x	x	x	x			x	x			x	x	MP7680J	◊ MicroPwr	
				x	x	x	x			x	x			x	x	MP7680S	† MicroPwr	
		30		x						x	x			x		DAC1210	National	

(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm \frac{1}{2}$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12	2	1	30	x						x	x			x		DAC1232	National	(Cont'd)
		2	30	x	x					x	x			x	x	MX7545A	Maxim	
				x	x					x	x			x	x	MX7545J	Maxim	
				x	x					x	x			x	x	MX7545S	† Maxim	
		50		x	x					x	x			x	x	AD7545SD	† Harris	5
				x	x					x	x			x	x	AD7545SQ/883	† Harris	
		450		x			x	x		x	x				x	AD7545A	Harris	
				x			x	x		x	x				x	AD7545J	Harris	
				x	x			x	x	x				x	x	MP7545A	MicroPwr	10
				x	x			x	x	x				x	x	MP7545J	MicroPwr	
				x	x			x	x	x				x	x	MP7545S	† MicroPwr	
				x	x	x	x			x	x			x		MP7645A	MicroPwr	
				x	x	x	x			x	x			x		MP7645J	MicroPwr	
				x	x	x	x			x	x			x		MP7645S	† MicroPwr	
	2.5	—	—	x	x					x	x		x			DAC338B-12-0	Sipex-HSD	15
	5	450 *		x	x					x	x		x			HS9338-0	Sipex-HSD	
	20 *	500		x	x					x	x		x		x	DAC9377-16-4	Sipex-HSD	
	500 *	24		x						x	x			x		AD7521L	National	
				x						x	x			x		AD7521U	† National	
4	0.25 *	473		x	x	x		x		x	x			x		HA17012C	Hitachi	20
	0.5 *	20 *		x	x	x	x			x	x			x		AD7521K	◊ AD	
				x	x	x	x			x	x			x		AD7521T	◊† AD	
				x	x	x	x			x	x			x		AD7531K	◊ AD	
				x	x	x	x			x	x			x		AD7521K	Harris	25
				x	x	x	x			x	x			x		AD7531K	Harris	
	0.5	20		x	x	x	x			x	x			x		MX7521K	Maxim	
				x	x	x	x			x	x			x		MX7521T	† Maxim	
				x	x	x	x			x	x			x		MX7531K	Maxim	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7521K	MicroPwr	30
				x	x	x	x			x	x			x		MP7521T	† MicroPwr	
				x	x	x	x			x	x			x		MP7531K	MicroPwr	
	500 *	24		x						x	x			x		AD7521K	National	
				x						x	x			x		AD7521T	† National	
				x						x	x			x		DAC1221	† National	
				x						x	x			x		DAC1221C	National	35
8	0.5 *	20 *		x	x	x	x			x	x			x		AD7521J	◊ AD	
				x	x	x	x			x	x			x		AD7521S	◊† AD	
				x	x	x	x			x	x			x		AD7531J	◊ AD	
				x	x	x	x			x	x			x		AD7521J	Harris	40
				x	x	x	x			x	x			x		AD7531J	Harris	
	0.5	20		x	x	x	x			x	x			x		MX7521J	Maxim	
				x	x	x	x			x	x			x		MX7521S	† Maxim	
				x	x	x	x			x	x			x		MX7531J	Maxim	
	0.5 *	20 *		x	x	x	x			x	x			x		MP7521J	MicroPwr	45
				x	x	x	x			x	x			x		MP7521S	† MicroPwr	
				x	x	x	x			x	x			x		MP7531J	MicroPwr	
	500 *	24		x						x	x			x		AD7521J	National	
				x						x	x			x		AD7521S	† National	
				x						x	x			x		DAC1222	† National	50
				x						x	x			x		DAC1222C	National	
	1/2	0.02	300	x						x	x		x		x	OPT506AC	Optimum Semi	
	42	1	30	x	x	x	x			x	x			x	x	MP1232AB	MicroPwr	
12 (dual)	1/2	1	450	x		x	x			x	x			x		DAC8222A	† AD (3318)	
				x		x	x			x	x			x		DAC8222E	AD (3318)	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line			
12 (dual)																					
1/2	1	450		x		x	x			x	x				x		DAC8222G	AD (3318)	5		
				x			x	x		x							DAC8248A	† AD (3318)			
				x			x	x		x								DAC8248E		AD (3318)	
				x			x	x		x								DAC8248G		AD (3318)	
	1.5	450	x	x						x	x							AD7537B		AD (3318)	
			x	x						x	x							AD7537C		AD (3318)	
			x	x						x	x							AD7537K		AD (3318)	
			x	x						x	x							AD7537L		AD (3318)	
			x	x						x	x							AD7537T		† AD (3318)	
			x	x						x	x							AD7537U		† AD (3318)	
			x	x						x	x							AD754L		AD	
			x	x						x	x							AD7547B		AD (3318)	
			x	x						x	x							AD7547C		AD (3318)	
			x	x						x	x							AD7547T		† AD (3318)	
			x	x						x	x							AD7547U		† AD (3318)	
	5		x				x											AD7837		AD (3316)	
			x				x											AD7847		AD (3316)	
			10	x				x												AD7237	AD (3317)
	x						x											AD7247		AD (3317)	
	1	1	450	x		x	x			x	x				x			DAC8222F		AD (3318)	20
				x		x	x			x	x			x			DAC8222H	AD (3318)			
				x			x	x		x							DAC8248F	AD (3318)			
				x			x	x		x							DAC8248H	AD (3318)			
	1.5	450	x	x						x	x							AD7537A		AD (3318)	25
			x	x						x	x							AD7537J		AD (3318)	
			x	x						x	x							AD7537S		† AD (3318)	
			x	x						x	x							AD7547A		AD (3318)	
	10	10		x													DAC8522	AD			
12 (quad)																					
1/2	5		x										x		x	AD7500A	AD (3316, 3357)	30			
	20	90		x						x	x				x *	DAC-8412	AD				
	2	10	500	x						x	x			x	x	DAC8412	† AD (3316)				
12-3 Digit BCD																					
1/10	1.5 *	465								x	x			x			AD562K/BCD	AD (3313)	35		
											x	x			x			AD562S/BCD		† AD (3313)	
											x	x		x				AD5631/BCD		AD (3313)	
											x	x		x				AD563K/BCD		AD (3313)	
											x	x		x				AD563S/BCD		† AD (3313)	
											x	x		x				AD563T/BCD		† AD (3313)	
	1/4	0.3/3 *	925							x	x		x				ADDAC80/CCD	AD		40	
						x				x	x		x				ADDAC85/CCD	† AD			
						x				x	x		x				ADDAC85C/CCD	AD			
										x			x				DACHZ12DC	Datel			
										x			x				DACHZ12DM	Datel			
										x			x				DACHZ12DMC	Datel (3441)			
	1/2	0.3/3 *	850 *							x			x				DAC85-CCD	† MicroNet	45		
				x	x					x	x		x				DAC349B-3D	† Sipex-HSD			
				x	x					x	x		x				DAC349C-3D	Sipex-HSD			
				x						x	x		x				DAC9349-3D	Sipex-HSD			
12-4 Digit BCD																					
1/2	20 *	500	x	x					x	x		x		x		DAC9377-4D	Sipex-HSD				

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.

Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm 1/2$ LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
12(dual)	1/2			x				x						x		DAC7802L	Burr-Brown (3418)	
	1			x			x							x		DAC7802K	Burr-Brown (3418)	
13	1	0.1	980				x			x			x			2615-12	ILC-DDC	
	2	0.1	980				x			x			x			2615-11	ILC-DDC	
	4	0.1	980				x			x			x			2615-10	ILC-DDC	5
13 (1 ch) and 6 (3 ch)	0.25	125		x						x					x	MB88301A	Fujitsu	
14	1/2			x	x					x	x			x		DAC9331-14	Sipex-HSD	
	0.05	2000		x	x											DAC02306	† ILC-DDC	
				x	x											DAC02307	† ILC-DDC	
	2	30 *		x	x					x	x			x		HS3140B-4	† Sipex-HSD	10
				x	x					x	x			x		HS3140C-4	Sipex-HSD	
	3			x				x		x	x			x	x	ICL7134	Harris	
	30			x	x					x	x			x		DAC331B-14	† Sipex-HSD	
				x	x					x	x			x		DAC331C-14	Sipex-HSD	
	5	600								x						HDD1409	AD	15
	30			x	x			x		x						A867-14	Adv Analog	
	100			x	x			x		x						414BIN	Adv Analog	
1	1.5			x										x	x	AD7534B	AD (3313)	
				x										x	x	AD7534K	AD (3313)	
				x										x	x	AD7534T	† AD (3313)	20
				x										x	x	AD7535B	AD (3313)	
				x										x	x	AD7535K	AD	
				x										x	x	AD7535T	† AD (3313)	
										x	x					AD7536K	AD (3313)	
										x	x					AD7536T	† AD (3313)	25
	45			x						x	x			x	x	MX7534B	Maxim	
				x						x	x			x	x	MX7534K	◊ Maxim	
				x						x	x			x	x	MX7534T	† Maxim	
	50			x						x	x			x	x	AD7538	† AD (3313)	
				x						x	x			x	x	MX7538	◊† Maxim	30
	60			x						x	x			x	x	MX7535B	Maxim	
				x						x	x			x	x	MX7535K	◊ Maxim	
				x						x	x			x	x	MX7535T	† Maxim	
					x					x	x			x	x	MX7536B	Maxim	
					x					x	x			x	x	MX7536K	◊ Maxim	35
					x					x	x			x	x	MX7536T	† Maxim	
	1000					x				x	x					SP7538	◊† Sipex-HSD	
	1.8	1775		x	x					x						DAC02310-103	† ILC-DDC	
				x	x					x						DAC02310-303	ILC-DDC	
	2	375 *		x	x	x				x	x			x		HS3140B-3	Sipex-HSD	40
				x	x	x				x	x			x		HS3140C-3	Sipex-HSD	
	3			x									x			AD7244	AD (3317)	
	4			x							x					AD7840	AD (3314)	
2	1.5			x										x	x	AD7534A	AD (3313)	
				x										x	x	AD7534J	AD (3313)	45
				x										x	x	AD7534S	† AD (3313)	
				x										x	x	AD7535A	AD (3313)	
				x										x	x	AD7535J	AD (3313)	
										x	x					AD7535S	† AD (3313)	
										x	x					AD7536J	AD (3313)	50
										x	x					AD7536S	† AD (3313)	
	45			x						x	x			x	x	MX7534A	Maxim	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm $\frac{1}{2}$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
14	2	1.5	45	x						x	x			x	x	MX7534J	o Maxim	(Cont'd)
				x						x	x			x	x	MX7534S	† Maxim	
		60		x						x	x			x	x	MX7535A	Maxim	
				x						x	x			x	x	MX7535J	o Maxim	
				x						x	x			x	x	MX7535S	† Maxim	
					x					x	x			x	x	MX7536A	Maxim	
					x					x	x			x	x	MX7536J	o Maxim	
					x					x	x			x	x	MX7536S	† Maxim	
	1.8	1775		x	x					x						DAC02310-102	† ILC-DDC	
				x	x					x						DAC02310-302	ILC-DDC	
	2	40 *		x	x					x	x			x	x	MP7614K	MicroPwr	
				x	x					x	x			x	x	MP7614T	† MicroPwr	
	15	780			x					x	x					AD396K	AD (3317)	
					x					x	x					AD396S	† AD (3317)	
					x					x	x					AD396T	AD (3317)	
	100			x	x			x		x						416BIN	Adv Analog	
4	2	40 *		x	x					x	x			x	x	MP7614J	MicroPwr	
				x	x					x	x			x	x	MP7614S	† MicroPwr	
16		260						x		x			x			PCM56	Burr-Brown (3419)	
	3	200								x	x			x		AD569S	† AD (3314)	
	1/8	25	1425	x				x		x			x		x	MP8116	Analogic	
	1/4	3.5	750		x			x	x	x	x		x			MP1936	Analogic	
		5	500		x			x	x	x	x		x			MP1926A	Analogic	
		50	500		x			x	x	x	x		x			MP1926S	Analogic	
	1/2	0.075	500	x	x					x	x		x		x	HS9390	† Sipex-HSD	
		0.1		x								x				HDAC52160	Signal Proc	
	2 *	60		x	x					x	x			x		DAC370B-16	† Sipex-HSD	
				x	x					x	x			x		DAC370C-16	Sipex-HSD	
				x	x					x	x			x		DAC9331-16-6	Sipex-HSD	
	3	60		x	x					x	x			x	x	SP9316	o† Sipex-HSD	
		500		x	x					x	x		x		x	SP1148	† Sipex-HSD	
	5 *	50 *		x	x					x	x			x	x	AD7546B	AD	
				x	x					x	x			x	x	AD7546K	AD	
	15	675				x	x			x			x			DACHPB/883B	Datel	
						x	x									DACHPB1/883B	Datel	
	20 *	500		x	x					x	x		x		x	DAC9377-16-6	Sipex-HSD	
	1	25		x												ICL7121	Harris	
		0.1	900	x	x					x	x		x		x	HS9390B	† Sipex-HSD	
				x	x					x	x			x	x	HS9390C	Sipex-HSD	
	0.5			x												DAC16	AD (3313)	
		250			x			x		x	x		x		x	TDA1543	Signetics	
	1 *	1 *	310 *		x	x	x	x	x			x	x	x		IR3K16B	Sharp	
					x	x	x	x	x			x	x	x		IR3K16BM	Sharp	
	1	1	465	x	x			x		x	x					HIDAC16B-5	Harris	
		790				x	x			x						DAC700C	o Burr-Brown (3418)	
						x	x			x						DAC700L	o Burr-Brown (3418)	
						x	x			x						DAC702C	o† Burr-Brown (3418)	
						x	x			x						DAC702L	o Burr-Brown (3418)	
	1.5			x									x			AD1856	AD (3313, 3354)	(Continued)

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time $\pm 1/2$ LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
16	1	2	30	x	x	x	x			x	x			x	x	MP7626L	MicroPwr	(Cont'd)
				x	x	x	x			x	x			x	x	MP7636AL	MicroPwr	
		60									x		x			μ PD6355G	NEC	
	2 *	60		x	x					x	x			x		DAC9331-16-5	Sipex-HSD	
	5	45								x	x			x	x	HS9371K	Sipex-HSD	5
										x	x			x	x	HS9371T	† Sipex-HSD	
	5 *	50 *		x	x					x	x			x	x	AD7546A	AD	
				x	x					x	x			x	x	AD7546J	AD	
	5	50			x			x							x	SP9372	† Sipex-HSD	
		900								x			x			ZPP2001	Burr-Brown	10
	6			x												AD1145	AD	
				x							x			x		AD7846	AD (3314)	
	8			x												DAC1136	AD (3314)	
		790				x	x			x						DAC701C	◊ Burr-Brown (3418)	15
						x	x			x						DAC701L	◊ Burr-Brown (3418)	
		940					x			x			x			DAC703L	◊ Burr-Brown (3418)	
	15	675				x	x			x			x			DACHP16BC	Datel	
						x	x			x			x			DACHP16BC-1	Datel	
	20 *	500		x	x						x		x	x	x	AD1147	AD (3314)	20
				x	x						x		x	x	x	AD1148	AD (3314)	
	30			x	x			x		x						A867-16	Adv Analog	
2				x				x			x					YM3025	Yamaha	
	0.3	365				x				x			x			MN3290I	† MicroNet	
							x			x			x			MN3291I	† MicroNet	
							x			x			x			MN3292I	† MicroNet	25
		790				x				x	x		x			DAC700B	◊ Burr-Brown (3418)	
						x				x	x		x			DAC700K	◊ Burr-Brown (3418)	
							x	x		x	x		x			DAC702B	◊ Burr-Brown (3418)	
							x	x		x	x		x			DAC702K	◊ Burr-Brown (3418)	
						x	x			x	x		x			PCM53K-I	Burr-Brown (3419)	30
2 *	0.35 *	230				x	x			x	x		x			PCM55H	Burr-Brown (3419)	
						x	x			x	x		x			PCM55J	Burr-Brown (3419)	
		540				x	x			x	x		x			PCM54H	Burr-Brown (3419)	
						x	x			x	x		x			PCM54J	Burr-Brown	
						x	x			x	x		x			PCM54K	Burr-Brown (3419)	35
2	0.35 *	800		x				x		x	x		x		x	DAC708B	Burr-Brown (3418)	
				x				x		x	x		x		x	DAC708K	Burr-Brown (3418)	
				x				x		x	x		x		x	DAC708S	† Burr-Brown (3418)	
	1	465		x	x			x		x	x					HIDAC16C-5	Harris	40
		700						x		x					x	IR3K16A	Sharp	
		750					x									DAC700SH/883B	† Burr-Brown (3418)	
		790				x	x			x						DAC700S	◊† Burr-Brown (3418)	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
16	2	1	790			x	x			x						DAC702S \diamond Burr-Brown (3418)	(Cont'd)	
			950				x			x			x			DAC71-COB-I Burr-Brown (3418)		
						x				x			x			DAC71-CSB-I Burr-Brown (3418)		
							x			x			x			DAC72BH-COB-I Burr-Brown (3418)		
						x				x			x			DAC72BH-CSB-I Burr-Brown (3418)		5
			1200	x			x	x					x			DAC71-COB-I MicroNet		
				x			x	x					x			DAC71-CSB-I MicroNet		
			1225				x			x			x			ADDAC71-COB-I AD (3313)		
						x				x			x			ADDAC71-CSB-I AD (3313)		
							x			x			x			ADDAC72-COB-I AD (3313)		10
						x				x			x			ADDAC72-CSB-I AD (3313)		
			1.5	x				x								AD766 AD (3314)		
2			20	x	x					x	x				x	MP7616T \dagger MicroPwr		
			30	x	x	x	x			x	x				x	MP7626K MicroPwr		
				x	x	x	x			x	x				x	MP7636AK MicroPwr		15
				x	x	x	x			x	x				x	MP7636AT \dagger MicroPwr		
				x	x					x	x				x	HS3160B-4 \dagger Sipex-HSD		
				x	x					x	x				x	HS3160C-4 Sipex-HSD		
2 *			60	x	x					x	x				x	DAC9331-16-4 Sipex-HSD		
4			20	x							x					YM3014 Yamaha		20
			530			x				x			x			MN3290V \dagger MicroNet		
							x			x			x			MN3291V \dagger MicroNet		
							x			x			x			MN3292V \dagger MicroNet		
			940			x				x	x		x			DAC701B \diamond Burr-Brown (3418)		
						x				x	x		x			DAC701K \diamond Burr-Brown (3418)		25
							x	x		x	x		x			DAC703B \diamond Burr-Brown (3418)		
							x	x		x	x		x			DAC703K \diamond Burr-Brown (3418)		
							x	x		x	x					DAC703KU \diamond Burr-Brown (3418)		
						x	x			x	x		x			PCM53K-V Burr-Brown (3419)		
5			45							x	x				x	HS9371J Sipex-HSD		30
										x	x				x	HS9371S \dagger Sipex-HSD		
			500					x					x		x	CX20152 Sony		
			1225				x			x			x			ADDAC71-COB-V AD (3313)		
						x				x			x			ADDAC71-CSB-V AD (3313)		
							x			x			x			ADDAC72-COB-V AD (3313)		35
						x				x			x			ADDAC72-CSB-V AD (3313)		
8 *				x				x								DAC1600 Burr-Brown (3418)		
8						x	x			x						DAC701S \diamond Burr-Brown (3418)		
						x	x			x						DAC703S \diamond Burr-Brown (3418)		
			940				x			x			x			DAC703C \diamond Burr-Brown (3418)		40
			950					x			x				x	DAC707 Burr-Brown		
								x		x	x		x		x	DAC707B Burr-Brown (3418)		
								x		x	x		x		x	DAC707K Burr-Brown		
								x		x	x		x		x	DAC707S \dagger Burr-Brown (Continued)		

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Setting Time \pm 1/2 LSB μ s	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
16	2	8	950	x				x		x	x		x		x	DAC709B	Burr-Brown (3418)	(Cont'd)
				x				x		x	x		x		x	DAC709K	Burr-Brown (3418)	
				x				x		x	x		x		x	DAC709S	† Burr-Brown (3418)	
		1175						x		x			x		x	DAC725K	Burr-Brown (3418)	
9		470						x					x		x	CX20133	◊ Sony	5
10				x									x		x	MN3290	† MicroNet	
		950				x				x			x			DAC71-CSB-V	Burr-Brown (3418)	
							x			x			x			DAC72BH-COB-V	Burr-Brown (3418)	
						x				x			x			DAC72BH-CSB-V	Burr-Brown (3418)	
		1200		x			x	x					x			DAC71-COB-V	MicroNet	10
				x			x	x					x			DAC71-CSB-V	MicroNet	
15		950					x			x			x			DAC70BH-COB-I	Burr-Brown (3418)	
						x				x			x			DAC70BH-CSB-I	Burr-Brown (3418)	
16		550								x	x		x		x	HS9378C	Sipex-HSD	15
										x	x		x		x	HS9378T	† Sipex-HSD	
35		1170				x	x			x			x			DACHP16BM	Datel	
						x	x			x			x			DACHP16BM-1	Datel	
						x	x			x			x			DACHP16BMC	Datel (3441)	
						x	x			x			x			DACHP16BMC-1	Datel (3441)	
3		940					x	x		x	x					DAC703JU	◊ Burr-Brown (3418)	20
4		0.3	790			x	x			x	x		x			PCM53J-I	Burr-Brown (3419)	
	1	450		x						x						MP7636C	MicroPwr	
				x						x						MP7636L	MicroPwr	
				x						x						MP7636U	† MicroPwr	
	465			x	x			x		x	x				x	4088	TeledyneC	25
	790					x	x			x						DAC702J	◊ Burr-Brown (3418)	
	2	30		x	x	x	x			x	x				x	MP7626J	MicroPwr	
				x	x	x	x			x	x				x	MP7636AJ	MicroPwr	
				x	x	x	x			x	x				x	MP7636AS	† MicroPwr	
	40 *			x	x					x	x				x	MP7616J	MicroPwr	30
				x	x					x	x				x	MP7616S	† MicroPwr	
4 *	2 *	280 *		x		x	x	x	x				x	x	x	IR3K17	Sharp	
4	4	940				x	x			x	x		x			PCM53J-V	Burr-Brown (3419)	
	6	40									x				x	LC7881	◊ Sanyo	35
		150								x	x				x	AD569J	AD (3314)	
										x	x				x	AD569K	AD (3314)	
	8	940				x	x			x						DAC703J	◊ Burr-Brown (3418)	
		1175						x		x			x		x	DAC725J	Burr-Brown (3418)	
	16	550								x	x		x		x	HS9378S	† Sipex-HSD	40
8	1	450		x						x						MP7636B	MicroPwr	
				x						x						MP7636K	MicroPwr	
				x						x						MP7636T	† MicroPwr	
	2	—		x	x					x	x				x	MP7616K	MicroPwr	
		30		x	x					x	x				x	HS3160B-3	† Sipex-HSD	45
				x	x					x	x				x	HS3160C-3	Sipex-HSD (Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Digital to Analog Converters (Cont'd)

Bits Res.	Linear-ity Error \pm LSB	Settling Time \pm 1/2 LSB μ S	Power Dis. mW (max.)	Bin. Input	Off. Bin. Input	Compl. Bin. Input	Compl. Off. Bin. Input	CTC or 2's Compl. Input	Sign. Magn. Input	TTL Logic	CMOS Logic	ECL Logic	Int. Ref.	Mult.	Latches	Device	Source	Line
16	12	0.05		x						x			x		x	MB87020	Fujitsu	(Cont'd)
	16	1	450	x						x						MP7636A	MicroPwr	
				x						x						MP7636J	MicroPwr	
				x						x						MP7636S	† MicroPwr	
	42	5	20	x							x					YM3012	Yamaha	5
16 (dual)			50					x			x		x			PCM66	◊ Burr-Brown (3419)	
	1	0.5 *	700	x	x			x								TDA1541A	Signetics	
		8	1175	x				x								DAC725B	Burr-Brown (3418)	
16-4 Digit BCD	2	10	1225							x			x			DAC71-CCD-V	Burr-Brown (3418)	10
							x			x			x			DAC71-COB-V	Burr-Brown (3418)	
16 (dual)	2	8	1175	x				x								DAC725A	Burr-Brown (3418)	
18			410					x		x			x			PCM58	Burr-Brown (3419)	
	1/2	6	100	x	x				x		x		x	x	x	AD1139	AD (3315)	
		10	750	x	x					x	x		x		x	SP9380	† Sipex-HSD	
	1	1.5		x									x			AD1860	AD (3313, 3315, 3354)	15
		6		x										x		DAC1146	AD	
		10		x												DAC1138	AD (3315)	
		20	60	x	x					x	x		x		x	DAC370B-18	† Sipex-HSD	20
				x	x					x	x		x		x	DAC370C-18	Sipex-HSD	
		500		x	x					x	x		x			DAC377-18	Sipex-HSD	
				x	x					x	x		x		x	DAC377B-18	† Sipex-HSD	
				x	x					x	x		x		x	DAC377C-18	Sipex-HSD	
	2		260					x		x			x		x	PCM61	Burr-Brown (3419)	
		1.5		x									x			AD1864	AD (3317, 3354)	25
				x									x			AD1868	AD (3317, 3354)	
		5	20	x		x	x	x					x			PCM64	Burr-Brown (3419)	
		25	1630			x	x			x			x			DAC729K	Burr-Brown (3418)	
	4	25	1630			x	x			x			x			DAC729J	Burr-Brown (3418)	
	6	3	40								x			x	x	LC78820	◊ Sanyo	
18 (dual)	2		400					x		x			x		x	PCM1700	Burr-Brown (3419)	30
20	2	0.35		x									x			AD1862	AD (3313, 3354)	
16	2			x				x			x					YM3015	Yamaha	
				x				x			x					YM3016	Yamaha	
				x				x			x					YM3020	Yamaha	

INTERFACE

Bin.—Binary
Off.—Offset

Magn.—Magnitude

Compl.—Complementary

Int Ref.—Internal Reference

CTC—Compl. 2's Compl.
Mult.—Multiplying

INTERFACE—Display Drivers

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
AC Plasma Axis Driver	SN65500E	TI		Dot Matrix LCD 80 Column Driver	NJU6404	♦ NJR (3595)		High Voltage Display Driver, 36 Segments	HI8010-32	Holt	
	SN75500E	TI			NJU6409	♦ NJR			HI8010-33	Holt	
Anode Driver (high-voltage vacuum fluorescent)	MSC1163	OKI		Electroluminescent Column Driver					HI8010-34	Holt	95
					SN65554	TI	50	High Voltage Display Driver, 53 Segments	HI8042	Holt	
Bargraph LED	LM3914	National	5		SN65555	TI		High Voltage Display Driver, 69 Segments	HI8041	Holt	
	LM3915	National			SN65556	TI		High Voltage Display Driver, 85 Segments	HI8040	Holt	
	LB1409	Sanyo		Electroluminescent Column Driver, 32 Outputs				Lamp Driver	CSR301	TeledyneC	
	TSC9403	TeledyneC			SN75555	TI		Latched Driver, 12-Bit Serial Input	M54977	Mitsubishi	100
	TSC9404	TeledyneC			SN75556	TI					
Bargraph Vacuum Fluorescent	LM3916	National		Electroluminescent Even Column Driver, 32 Outputs	Si9554	Siliconix		LCD Alphanumeric Controller/Driver, Intelligent	μPD7225	♦ NEC	
BiMOS Segment Latch Driver	CA3208	Harris	10		SN55554	† TI	55				
BiMOS Sequencer Driver	CA3207	Harris		Electroluminescent Even Column Driver, 32 Outputs	SN55552	† TI		LCD Bargraph Driver (with A/D converter)	TSC825	TeledyneC	
Column Driver, -250V DC-PDP (64 drivers)	μPD16301	NEC			SN65552	TI			TSC827	TeledyneC	
Column Driver, 80V AC-PDP/EL/FIP (64 drivers)	μPD16306	NEC			SN75552	TI		LCD Character Display Driver	SED1278F	S-MOS	
DC Plasma and Gas Discharge Data Line Driver				Electroluminescent, High Voltage (octal, 450 V)	USH5801	Universal	60	LCD Clock Driver, Direct Drive	PCF1174	Signetics	105
	SN751508	TI			USH5802	Universal					
	SN751518	TI	15	Electroluminescent, High Voltage (200 V)	USH5800	Universal		LCD Clock Driver, Duplex Drive	PCF1175	Signetics	
DC Plasma and Gas Discharge Scan Line Driver				Electroluminescent Odd Column Driver, 32 Outputs	Si9553	Siliconix		LCD Clock Driver, 3-1/2 Digit	MIC8027	Micrel	
	SN751506	TI			SN55553	† TI	65	LCD, Column Driver Controller (108 outputs, high voltage)	H01373	† Hughes	
	SN751516	TI		Electroluminescent Odd Column Driver, 32 Outputs	SN75553	TI		LCD Common Driver	LC7942	♦ Sanyo	
Decoder Driver, 4-Bit Input, 16-Line Output	IR2C12	Sharp			SN55551	† TI		LCD Controller	M6265	OKI	110
Display, Alphanumeric, LED	TIL305	TI		Electroluminescent Odd Row Driver, 32 Outputs	SN65551	TI		LCD Controller and Driver	LC7985	♦ Sanyo	
Display Column Driver, 32-Channel Gray-Shade	HV3806	♦ Supertex	20		SN75551	TI		LCD Controller/Driver (for dot-matrix)	GM9120	GoldStar	
Display Controller/Driver (bargraph and numeric)	MSC1951-01	OKI		Electroluminescent Row Driver, 32 Outputs	SN75557	TI	70	LCD Controller/Driver, 2 Row x 16 Character Dot Matrix	H0216	Hughes	
Display Driver, Alphanumeric	MSC1937-01	OKI (3604)			SN75558	TI		LCD Controller/Driver, 2 Row x 8 Character Dot Matrix	H0208	Hughes	
Display Driver, Eight 7-Segment	ICM7228A	Harris		Electroluminescent Row Driver, 34 outputs	SN65563A	TI		LCD Controller, Large Panel	SED1330F	S-MOS	115
	ICM7228B	Harris			SN65564A	TI		LCD Controller with Built-In Character Generator	HD43160AH	Hitachi	
Display Driver, 35 High-Voltage LCD	HI8011	Holt	25		SN75563A	TI		LCD Controller, Two Rows by 8 Character	H01421	† Hughes	
Display Driver, 7-Segment Gas Discharge Display				FIP/LED Driver	μPD6700	NEC	75	LCD Controller, 16-Dot Row, 40-Dot Column	M6222	OKI	
Cathode Driver with BCD Decoder	DI8884A	Dionics			μPD16304	NEC		LCD/CRTC Controller (640x400 Dot Matrix)	TC7779	Toshiba	80
Display, Numeric, LED				Flasher, Pulse Generator	U175M	AEG Corp		LCD Display Driver, Multi-Digit	TSC828	TeledyneC	120
	TIL302	TI			U176M	AEG Corp		LCD Display Driver, 32-Segments	MIC8014	Micrel (3575)	
	TIL302A	TI		Fluorescent Display Driver				LCD Dot Matrix Controller	M6240	OKI	
	TIL303	TI	30		HA16617	Hitachi			M6255	OKI	
	TIL303A	TI		Gas Discharge Cathode Driver (225V max.)	HA16619	Hitachi			LC7980	♦ Sanyo	
	TIL304	TI			DI220	Dionics			LC7981	♦ Sanyo	125
	TIL304A	TI		Graphic LCD Display Controller				LCD Dot Matrix Controller/Driver, Intelligent	μPD7227	♦ NEC	
	TIL306	TI			SED1351F	S-MOS	35		μPD7228	♦ NEC	
	TIL306A	TI		Graphic Video LCD Display Controller	SED1345F	S-MOS		LCD Dot Matrix Display Controller	HD61830	Hitachi	
	TIL307	TI						LCD Dot Matrix Display Controller and Driver	HD44780	Hitachi	130
	TIL307A	TI		Grid/Anode Driver (high-voltage vacuum fluorescent)	MSC1164	OKI (3604)	40	LCD Dot Matrix Driver	HD44102CH	Hitachi	
	TIL308	TI							HD44103CH	Hitachi	
	TIL308A	TI		Grid Driver	LH1001	Sharp					
	TIL309	TI		Grid Driver (high-voltage vacuum fluorescent)	MSC1162	OKI (3604)					
	TIL309A	TI									
Display, Hexadecimal, LED				High Voltage Display Driver, 25 Segments	HI8043	Holt					
	TIL311	TI		High Voltage Display Driver, 30 Segments	HI8010-15	Holt					
	TIL311A	TI			HI8010-35	Holt					
Dot Matrix LCD Controller Driver (5x7, 5x10 display)	NJU6408	♦ NJR (3595)			HI8010-36	Holt	90				
Dot Matrix LCD Serial-In 86 Row Driver	NJU6405	♦ NJR (3595)			HI8010-37	Holt					
Dot Matrix LCD 40-Segment Driver	NJU6407	♦ NJR (3595)	45								
Dot Matrix LCD 64-Segment Driver	NJU6417	♦ NJR (3595)		High Voltage Display Driver, 34 Segments	HI8010-31	Holt					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Display Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
LCD Dot Matrix Driver			(Cont'd)	LCD Driver, 32 Segments (external oscillator, 35V max.)	HI8020-84	Holt		LCD Driver, 38 Segments (external osc, 40V max)	ICS1501E1	IntCirSys	
HD44105CH	Hitachi			LCD Driver, 32 Segments (selectable internal or external oscillator)	HI8020-85	Holt	50	ICS1501E2	IntCirSys		
HD61102	Hitachi			LCD Driver, 32/64 Segment				LCD Driver, 38 Segments (selectable internal or external oscillator, 40V max)	ICS1501E3	IntCirSys	
HD61103A	Hitachi			HD61602	Hitachi			LCD Driver, 40-Channel Output	HD44100H	Hitachi	90
HC0515	Hughes		5	HD61603	Hitachi			LCD Driver, 6-bit Parallel	MAX7231	Maxim	
HC0538A	Hughes			PCF8577	Signetics			LCD Driver, 75 Segments (external osc, 40V max)	ICS1521E4	IntCirSys	55
HC0539A	Hughes			LCD Driver, 32-Channel	HV6706	Supertex	10	ICS1521E2	IntCirSys		
HC0540	Hughes			LCD Driver, 32-Dot Row	M5238	OKI		LCD Driver, 80-Channel Output	HD61100A	Hitachi	
HC0550	Hughes			LCD Driver, 33-Segment w/Serial Interface	MC145453	Motorola	15	LCD Driver, 30 Segments (external osc, 40V max)	ICS1502E2	IntCirSys	95
HC0551	Hughes			LCD Driver, 34 Segments (external oscillator, 35V max.)	HI8010-65	Holt		LCD Graphics Driver	SED1500	S-MOS	
HC0607	Hughes			LCD Driver, 34 Segments (internal oscillator, 35V max.)	HI8010-67	Holt		LCD Row Driver (common output)	SED1703	S-MOS	
SED1200	S-MOS			LCD Driver, 34 Segments (selectable internal or external oscillator)	HI8010-01	Holt		LCD, Row Driver Controller (108 outputs, high voltage)	H01374	Hughes	
LH5821	Sharp			HI8010-66	Holt		60	LCD Segment Driver	LC7940	Sanyo	
LH5822	Sharp			LCD Driver, 35V max, 38 Outputs	HI8010	Holt		LCD 5x7 Dot Driver	LH5003	Sharp	100
LH5823	Sharp			LCD Driver, 38 Segments (external oscillator, 35V max.)	HI8010-04	Holt		LH5004	Sharp		
LH5826	Sharp			HI8020-63	Holt			LCD, 16 Character Extender	H01371A	Hughes	
LCD Dot Matrix Driver, 40-Segment	LH5006A	Sharp		HI8020-81	Holt			LCD, 80-output Direct Drive	H01371B	Hughes	
LCD Dot Matrix Driver, 80 Segment	LH5021B	Sharp		LCD Driver, 38 Segments (internal oscillator, 35V max.)	HI8010-03	Holt	65	LED Bar Display Driver, 10 LEDs	TA7612A	Toshiba	
LH5023B	Sharp			HI8020-61	Holt			LED Digit Driver	MSL966	OKI	105
LCD Dot Matrix Driver, 80-Segment	LH5021A	Sharp		HI8020-80	Holt			LED Display Driver, 2 Digits	MM5481	National	
LH5022	Sharp		20	LCD Driver, 38 Segments (selectable internal or external oscillator)	HI8010-02	Holt		LED Display Driver, 5 LEDs	TA7654	Toshiba	
LCD Dot Matrix Driver, 100 Common	LH5025	Sharp		LCD Driver, 40/80/120/160 Segments	PCF8576	Signetics		TA7655	Toshiba		
LCD Dot Matrix Driver, 160 Segment	LH5026	Sharp		LCD Driver, 40-Dot Column	M5259	OKI		LED Display Driver, 33 Outputs, 15 mA Sink Capability	MM5486	National	110
LCD Driver	LC7580	Sanyo		M5839B	OKI			M5486	SGS-Thomson		
LC7582	Sanyo			LCD Driver, 48-Dot	M5219B	OKI	30	LED Display Driver, 34 Outputs, 15 mA Sink Capability	M5450	SGS-Thomson	
LCD Driver, Active Matrix	M5280	OKI	25	LCD Driver, 56-Dot	M5221	OKI		LED Display Driver, 35 Outputs, 15 mA Sink Capability	M5451	SGS-Thomson	
M5282	OKI			LCD Driver, 64-Channel	HV6101	Supertex		LED Display Driver, 3 1/2 Digits	MM5480	National	
LCD Driver, Bit Serial (hex, BCD)	MAX7232	Maxim		LCD Driver, 64-Dot Row	M5278	OKI	35	LED Driver, Running Indicator	IR2408	Sharp	
LCD Driver, Bit Serial (upper case ASCII)	MAX7234	Maxim		LCD Driver, 68-Dot Row	M5298	OKI		LED Driver System, 8 Decade, 8x8 Memory, Decoder			
LCD Driver, Column Output (160 segment)	SED1704	S-MOS		LCD Driver, 80 Output Direct Drive/ Multiplexed	H0480	Hughes		(versions either hardware or processor controlled; with 7 segment and digit drivers for either common anode or cathode LEDs; 2-6 V supply)			
LCD Driver, Column Output (160 segment drive outputs)	SED1702	S-MOS		LCD Driver, 80/160-Dot	M5265	OKI	40	ICM7218A	Harris	115	
LCD Driver, Dichroic	S4520	Gould AMI		LCD Driver, 80-Dot Column	M5279	OKI		ICM7218B	Harris		
LCD Driver, Frequency Display	LC7583	Sanyo		M5299	OKI			ICM7218C	Harris		
LCD Driver, Large Panel				LCD Driver, 80-Dot Row/Column	M5260	OKI		ICM7218D	Harris		
SED1180F	S-MOS			LCD Driver, 30 Segments (internal osc, 40V max)	ICS1502E1	IntCirSys	75	ICM7218A	Maxim		
SED1181F	S-MOS			LCD Driver, 30 Segments (selectable internal or external oscillator, 40V max)	ICS1502E3	IntCirSys		ICM7218B	Maxim		
SED1190F	S-MOS			LCD Driver, 32 Segments (external osc, 40V max)	ICS1505E2	IntCirSys	80	ICM7218C	Maxim		
SED1191F	S-MOS			LCD Driver, 32 Segments (internal osc, 40V max)	ICS1505E1	IntCirSys		ICM7218D	Maxim		
SED1600F	S-MOS			LCD Driver, 32 Segments (selectable internal or external oscillator, 40V max)	ICS1505E3	IntCirSys	85				
SED1610F	S-MOS							LED Driver, 5-Dot	IR2E01	Sharp	125
LCD Driver with Character Generator	LC7584N	Sanyo						IR2E13	Sharp		
LCD Driver with High Voltage Charge Pump, 30 Segments (external osc, 40V max)	ICS1504E1	IntCirSys						IR2E25	Sharp		
ICS1504E2	IntCirSys							IR2E31	Sharp		
ICS1504E3	IntCirSys							IR2E32N	Sharp		
LCD Driver (with 40-Channel outputs)	GM9110	GoldStar									
LCD Driver, Four Digit, Seven Segment	CD7211	Harris									
LCD Driver, 5-Digit, 8-Segment	M58292	OKI	45								
LCD Driver, 30 Segments (external oscillator, 35V max.)	HI8010-05	Holt									
LCD Driver, 30 Segments (internal oscillator, 35V max.)	HI8010-07	Holt									
LCD Driver, 30 Segments (selectable internal or external oscillator, 35V max.)	HI8010-06	Holt									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Display Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
BCD to 7-Segment Decoder/Driver, for Liquid Crystal Displays	CD4055B CD4055BE TC4055B	† Harris Harris Toshiba	(3727)	2-Digit LED Driver	M5481 M5482	SGS-Thomson SGS-Thomson		5-Character, 18-Segment Triplexed LCD Decoder/Driver	ICM7234 MAX7234A MAX7234B	Maxim Maxim Maxim	
BCD to 7-Segment Decoder/Driver, 2-Digit, Direct Driver for Common Anode LED Displays	DS8669	National		3- 1/2-Digit LED Driver	M5480	SGS-Thomson		5-Line Plasma Display Axis Driver	DI5140 DI5180 DI5240 DI5280	Dionics Dionics Dionics Dionics	95
BCD to 7-Segment Latch/Decoder/Driver (CMOS with bipolar output)	CD4511B CD4511BE MC14511BC MC14513BC CD4511BC CD4511BM HCC4511B HCF4511B HEF4511B HEF4511BD TC4511B	† Harris Harris ◊ Motorola ◊ Motorola National † National SGS-Thomson ◊ SGS-Thomson Signetics Signetics Toshiba	5 10 15	4-Bit Multiplexed LCD Driver (4x7)	HC7211-1 HC7211-2	Hughes Hughes	50	5-Step, Linear, LED Driver	KA2286 KA2287	Samsung Samsung	100
BCD to 7-Segment Latch/Decoder/Driver, for Liquid Crystal Displays	CD4543BD CD4543BE	† Harris Harris		4-Channel Incandescent Lamp Driver	CLD4	TeledyneC		5-Step, Logarithmic, LED Driver	KA2284 KA2285	Samsung Samsung	
BCD to 7-Segment Latch/Decoder/Driver (strobed latch), for Liquid Crystal Displays	CD4056B CD4056BE LS7100 MC14543BC TC4056B	† Harris Harris LSI Comp ◊ Motorola Toshiba	(3565) (3727)	4-Channel Plasma	XR2284	Exar		5-Step, Logarithmic, LED Driver, Dual	KA2281 KA2283	Samsung Samsung	
BCD to 7-Segment Latch/LCD/Decoder/Driver (ripple blanking)	MC14544BC	◊ Motorola		4-Character, 18-segment triplexed LCD Decoder/Driver.	MC7233	Micrel	(3575)	5-Step Logarithmic Dual LED Driver	TA7666 TA7667	Toshiba Toshiba	105
BCD to 7-Segment LED Decoder/Driver	CA3168	Harris		4-Character, 18-Segment Triplexed LCD Decoder/Driver	ICM7233 MAX7233A MAX7233B	Maxim Maxim Maxim	55	5x2 LED Driver	IR2E27	Sharp	
BCD to 7-Segment LED Decoder/Driver, Constant Current	NE587	Signetics		4-Digit Gas Discharge Display Anode Driver	DI500B DI502B	Dionics Dionics	60	6-Digit Gas Discharge Display Anode Driver	DI505B DI507B DI603A DI604A DI605A 8891	Dionics Dionics Dionics Dionics Dionics Signetics	110
BCD to 7-Segment LED Decoder/Driver with Latch, Output 0-9, —, E, H, L, P	9374C	National		4-Digit LCD Driver	ICM7211AM ICM7211M ICM7211AM ICM7211M	Harris Harris ◊ Maxim ◊ Maxim		6-Digit MOS to LED Cathode Driver	DS55494 DS75492 DS75494 DS8870	† National National National National	115
BCD Seven-Segment Cathode Driver (125V max.)	DI270B	Dionics		4-Digit LED Driver, Multiplexed-BCD or Binary to 7-Segment Decoder/Driver	ICM7212 ICM7212A	◊ Maxim ◊ Maxim	65	6-Digit/Segment Vacuum Fluorescent	UDN6116A DI508B DI509B	Allegro Micro Dionics Dionics	120
BCD-to-Decimal Decoder/Driver (for lamps)	380A/C 380B/M 381A/C 381B/M	TeledyneC † TeledyneC TeledyneC † TeledyneC	20	4-Digit LED Driver, BCD or Binary to 7-Segment Decoder/Driver, Data and Digit Select Code Latches for μP Interface	ICM7212AM ICM7212AM ICM7212M TSC701AM TSC7212A TSC7212AM	Harris ◊ Maxim ◊ Maxim TeledyneC ◊ TeledyneC TeledyneC	70	6-Digit BCD (stores segment and address data, drives 7-8 segment digits)	MM74C912	National	
BCD-to-Decimal Decoder/Driver (nixie driver)	DM5441A 382A/C 382B/M	† National TeledyneC † TeledyneC	25	4-Digit Liquid Crystal, Multiplexed BCD to LCD Decoder/Driver, AC Drive	ICM7211 ICM7211A ICM7211 ICM7211A	Harris Harris ◊ Maxim ◊ Maxim	30	6-Digit Hex (stores segment and address data, drives 7 segments)	MM74C917	National	
BCD-to-Decimal Decoder/Driver with Blanking (for cold cathode indicator tubes)	54141 74141	† Rochester Rochester	35	4-Digit/Segment Vacuum Fluorescent	DI503B DI504B	Dionics Dionics		6-Digit, 7-Segment LCD Driver with Decimal Points, or Three 16-Segment Characters. 48-Stage Shift Register, 48-Bit Data Latch and 48-Segment Driver	MSM5219	◊ OKI	(3605)
BCD-to-Seven Segment Decoder/Driver with Active Pull-up	SN54LS247 SN54LS248 SN54LS47 SN54LS48	Motorola Motorola Motorola Motorola	40	4-Digit Select Microprocessor Interface (4x7)	HC7211-3 HC7211-4	Hughes Hughes	80	7-Digit MOS to Gas Discharge	XR2272	◊ Exar	
Hex TTL to LED Bulb Driver, with Latch	DS8859	National		4-Digit (stores segment and address data, drives 7-8 segment digits)	MM74C911	National		7-Digit/Segment MOS to Vacuum Fluorescent	XR2271	◊ Exar	125
Hexadecimal to 7-Segment Latch/Decoder/Driver (CMOS with bipolar output)	MC14495	◊ Motorola		4-Digit/8-Segment Vacuum Fluorescent	COP470	National		7-Line Dot Matrix or Segmented	SN75581	TI	
Seven High Current NPN Transistors, Common Collector	CA3082	† Harris		4-Digit, 17-Segment Alpha-Numeric with Memory, Decoder and LED Drivers	MM74C956 NSM4507	National National		7-Segment Decoder/Driver with Serial Interface	MC14499	◊ Motorola	
Seven NPN Transistors, Common Emitter	CA3081	† Harris		4-Digit, 7-Segment LCD Decoder/Driver	TSC7211A	◊ TeledyneC	85	7-Segment Gas Discharge Display Cathode Driver, with BCD Decoder	DS7880 DS8880 DS8884A	† National National National	130
Seven Segment LED (serial interface)	MC14489	Motorola	45	4-Digit, 7-Segment LED Decoder/Driver	TSC700A	TeledyneC		7-Segment Latch/Decoder/Electroluminescent/Display Driver, High Voltage	HV30	Supertex	
				4-Segment Liquid Crystal	CD4054B TC4054B	Harris Toshiba		7-Segment, LCD Driver	IR2E34	Sharp	
				4-Segment MOS to LED Anode Driver	DS55493 DS75491 DS75493	† National National National	90	7-Segment to BCD Converter/Driver	MM54C915 MM74C915	† National National	
								7x2 LED Driver	IR2E09 IR2E28	Sharp Sharp	135

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Display Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
7x2-Segment LED Driver	IR2E35	Sharp		12x2 LED Driver	IR2E12	Sharp		32-Segment Vacuum Fluorescent Display Driver	SED2032F	S-MOS	100
8-Channel Plasma	XR2288	Exar			IR2E20	Sharp		40-Segment LCD Duplex	PCF2100	Signetics	
8-Character, 14/16 Segment LED Display Driver	ICM7243	Harris		13-Bit Driver, Serial Input, Parallel Output	IR2412A	Sharp		64-Channel Serial to Parallel Converter with Open Drain Outputs (for AC electroluminescent displays), 220V			
8-Digit Gas Discharge Display Anode Driver				16-Line Vacuum Fluorescent	DS8881	National	55	HV0322	Supertex		
DI510B	Dionics		5	16-Segment LED Display Drivers	MM5484	National		HV0330	Supertex		105
DI512B	Dionics			20-Digit Alphanumeric or Dot Matrix VF Driver	MM58242	National		HV04H06	Supertex		
DI803A	Dionics			20-Line Vacuum Fluorescent Display Driver	TL5812	TI		HV04H08	Supertex		
DI804A	Dionics			20-Segment Vacuum Fluorescent Display Driver	SED2020F	S-MOS		HV0406	Supertex		
DI805A	Dionics			24-Channel Matrix Panel Display Column Driver	HV08	Supertex	60	HV0408	Supertex		
8-Digit MOS to LED Cathode Driver	DS8863	National	10	32-Bit LCD Driver	S4521	◊ Gould AMI		HV0522	Supertex		
DS8963	National			32-Channel AC Plasma Display Driver				HV0530	Supertex		110
8-Digit/Segment Vacuum Fluorescent				HV500	Supertex			HV06H06	Supertex		
UDN6118A	Allegro Micro			HV501	Supertex			HV06H08	Supertex		
UDN6128A	Allegro Micro			32-Channel Liquid Crystal Display Driver, ± 40V	HV6008	Supertex		HV0606	Supertex		
UDN6138	Allegro Micro			32-Channel Serial to Parallel Converter with P-Channel Open Drain Outputs (for AC Electroluminescent Displays)	HV4122	Supertex	65	HV0608	Supertex		
DI513B	Dionics			HV4222	Supertex						
DI514B	Dionics		15	HV4522	Supertex			64-Segment LCD Duplex	PCF2111	Signetics	
XR6118	◊ Exar			HV4530	Supertex						
XR6128	Exar			HV4622	Supertex		70				
NE594	Signetics			HV4630	Supertex						
SA594	Signetics			HV5122	Supertex						
8-Digit, 7-Segment Triplexed LCD Decoder/Driver	ICM7231	Harris	20	HV5222	Supertex						
ICM7231	Maxim			HV5306	Supertex						
MAX7231A	Maxim			HV5406	Supertex		75				
MAX7231B	Maxim			HV5408	Supertex						
MAX7231C	Maxim			HV5522	Supertex						
8-Output Digit-Scan Counter/Decoder for Cold-Cathode Counter Tubes				HV5530	Supertex						
MSL9510R	OKI		25	HV5622	Supertex						
MSL9511R	OKI			HV5630	Supertex		80				
8-Segment Gas Discharge Display Cathode Driver				HV5708	Supertex						
UDN7180A	Allegro Micro			HV5808	Supertex						
DI210	Dionics										
DI230A	Dionics		30	32-Channel Serial to Parallel Converters with High Voltage Push-Pull Outputs (for AC Electroluminescent Displays), 80V	HV5308	Supertex					
DI240A	Dionics			32-Digit Alphanumeric or Dot Matrix VF Driver							
DI300	Dionics			MM58241	National		85				
DI302	Dionics			MM58248	National						
DS7889	† National			MM58341	National						
DS8889	National			MM58348	National						
8-Segment MOS to LED Anode Driver	DS8867	National	35	32-Line AC Plasma Display Axis Driver	SN55500E	† TI					
9-Digit MOS to LED Cathode Driver	DS8973	National		SN65501E	TI						
9-Digit MOS to LED Cathode Driver with Shift Register Decoding	DS8874	National		SN75501E	TI						
10-Bit Driver, Serial Input, Parallel Output	IR2C02	Sharp		32-Line Electroluminescent Display Column Drivers	SN75567	TI	90				
10-Bit Serial In/Parallel Out Fluorescent (for μ P systems)	TL4810B	TI	40	SN75568	TI						
UCN4810A	◊ TI			32-Line Vacuum Fluorescent	SN75518	TI					
10-Channel Serial-Input Latched Display Driver	HV6810	Supertex		32-Row LCD Dot-Matrix Driver	MSM5238	◊ OKI					
10-Digit, 7-Segment Triplexed LCD Decoder/Driver	ICM7232	Harris	45	32-Segment LCD	MM5452	National	95				
ICM7232	Maxim			MM5453	National						
MAX7232A	Maxim			32-Segment LCD Controller/Driver	μ PD7255	NEC					
MAX7232B	Maxim			32-Segment LCD Driver	AY0438I	Microchip					
MAX7232C	Maxim			MM5483	National						
12-Line Vacuum Fluorescent	UCN5811A	Allegro Micro		PCF2112	Signetics						
12-Line Vacuum Fluorescent	SN75514	TI									
12-Line Vacuum Fluorescent Display Driver	SN65512B	TI									
SN75512B	TI		50								
12-Segment, LCD Driver	IR2429	Sharp									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Error Checking Circuits

Function	Max. Serial Data Rate, MHz	Supply Voltage, V	Device	Source	Line
Bus Buffer Correction (4-bit for use with EDAC unit)		5	MC74F2961A MC74F2962A	Motorola Motorola	
Clock Recovery Circuit	50	5	T7032	AT&T	
Codec, Convolutional Coder/Viterbi Decoder (for forward error correction)	0.01	5	STI5268	STEL	
Convolutional Encoder	1	5	STEL2012	STEL	5
CRC Generator/Checker	10 12	5 5	8X01A 54F401 74F401 N9401 S9401	Signetics † National ◊ National Signetics † Signetics	10
CRC Generator/Checker (expandable)	30	5	54F402 74F402	National ◊ National	
Decoder, Forward Error Correction (Viterbi decoding algorithm)	2.1 2.7 4.1	5 5 5	SCOM2001B SCOM2001C1 SCOM2001P SCOM2001C2	† Spancom Spancom Spancom Spancom	15
Error Detection and Support Logic, for Winchester Disk System	5	5	1014-01-05 WD1014	Micro-C Western	
Error Detection/Correction Circuit	—	5	8206 WD8206	Intel ◊ Western	20
Error Detection/Correction Circuit (ECL)	—	-5.2	MC10163	Motorola	
Error Detection/Correction Circuit (TTL)	—	5	AM2960 MB1412A MB1426 MC74F2960 DP8402A DP8403 DP8404 DP8405 54F420 74F420 2960 54F630 54F631 SN54LS630	* AMD Fujitsu Fujitsu Motorola National National National National † National National Signetics † Signetics † Signetics ◊† TI	25 30 35
	-15		AM2960-1	* AMD	
Error Detection/Correction Circuit (TTL), Serial Burst	—	5	74F430	National	
Error Detection/Correction Unit (CMOS)		5	P54PCT632 P54PCT633 P54PCT634 P54PCT635 P74PCT632 P74PCT633 P74PCT634 P74PCT635	† Performance † Performance † Performance † Performance Performance Performance Performance Performance	40 45
Expandable Error Checker and Corrector	—	5	DP8400	National	
Forward Error Correction (FEC) Encoder/Decoder (for MIL-STD-188-141A and FED STD 1045).			SRT-141A/1045	SpaceResearch	
Forward Error Correction (FEC) Encoder/Decoder (24,12 Extended Golay).			SRT24-12-03	SpaceResearch	
Polynomial Generator/Checker	3.5 *	5	SCN68653	◊ Signetics	
Viterbi Decoder (for forward error correction)	256 kb/s	5	STI2010	STEL	50
Winchester Disk CRC Checker/Generator			HDC1100-04	SMC	
Triple Error Correction/Encoder			XRT24-12-03	SpaceResearch	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

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INTERFACE—Keyboard Encoder-Decoders

No. of Keys	No. of Output Bits	Code	Max. Clock Rate, KHz	Supply Voltage, V	Comments	Device	Source	Line
Keyboard Programmable Keyless Locks						LS7222 LS7223	LSI Comp (3565) LSI Comp (3565)	5
Public Key Encryption Processor						CA34C168	Newbridge (3593)	
16	4	Binary	—	3–15	2 key rollover, 3 state output	MM54C922	*† National	
20	5	Binary	—	3–15	2 key rollover, 3 state output	MM74C922	° National	
85	8	ASCII/HEX	1000	4–6.5 4–10.5	Scans and generates code for 53 key ASCII plus 32 non-ASCII keys Scans and generates code for 53 key ASCII plus 32 non-ASCII keys	CDP1871AC CDP1871A	Harris Harris	
90	10	External ROM Programmable	100	5	9x10 matrix, N key rollover, parallel output 9x10 matrix, N key rollover, parallel output, caps lock, auto repeat	KR9600 KR9601	SMC SMC	10
		Mask Programmable	100	5	9x10 matrix, N key rollover, serial output, caps lock, auto repeat	KR9602	SMC	
128	9	Mask Programmable	100	5	16 x 8 matrix, three-state I/O, 2 or 3 key alarm	MSM3914A	OKI	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

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INTERFACE—Line Circuits

No. Per Device	Output	Party Line	Supply Voltage, V	Comments	Device	Source	Line
Line Drivers—Single Ended							
1		No	+,-5	Video Line Driver, High Speed Op-Amp	CA3450	Harris	(3508)
2	-0.5 to 5.5 V ± 4 to 6 V	No No	5 ± 9 to ± 15	RS422A, RS423A RS232, RS423, CCITT V.26, V.28	μA9639C μA9636AC μA9636AM μA9636AC	TI National National TI	5
	± 6 V ± 8 V	No No	± 12 ± 12	4 Input RS232C	N8T15 DS75150 75150 SN75150	Signetics National Rochester TI	10
	± 15 V High Current	No Yes	± 15 5	RS423A, RS423C Coax/Twisted Pair	μ9636A DS75123 N8T23 SN75123	TI National Signetics TI	15
				Emitter Follower for Coax/Twisted Pair	DS55121 DS75121 N8T13 S8T13 SN55121 SN75121	↑ National National Signetics Signetics ↑ TI TI	20
	TTL	No	5 7	Three-State, Inverting	LD6005 DS55110A DS75110A	Adv Analog ↑ National National	25
	0.8 to 2.0 2.4 12 mA	No	± 12 5 ± 7	RS-423/RS-232C General Purpose Interface Bus	MC3488A SN75ALS121 μA55110A μA75110A	Motorola TI ↑ National National	30
3	± 6 V	No	± 12	RS232B/C, CCITT, MIL188	μA9616HC μA9616HEC μA9616HM	National National ↑ National	35
	Open Collector	No	5	Triple Line Transmitter	HS245RH-8	↑ Harris	40
4	-0.1 to -14.2	No	5 5,-5	4 RS-232 Drivers NTDS Quad Driver, MIL-STD 1397A	AD234 GET47521268	AD ♦ GET Eng	(3356)
	± 3 to ± 9 V ± 4 to ± 12 V ± 4 to 6 V	No No No	± 4.5 to ± 12 ± 5 to ± 15 ± 5	RS232C, CCITT V. 24 RS232/432 RS423, RS422 with mode control	DS14C88 LT1032 AM26LS30C DS3691 AM26LS30	National LinearTech AMD National Signetics	45
			± 5.5	RS423, RS422 with mode control	AM26LS30M DS1691	♦ ↑ AMD ↑ National	50
		Yes	± 5 ± 5.5	RS423, Three-State RS423, Three-State	AM26LS29C AM26LS29M	♦ AMD ♦ ↑ AMD	55
	± 6 to 9 V	No	± 9 to ± 15	RS232C, CCITT V.24	XR1488 MC1488 DS1488 MC1488 MC1488 MC1488 SN55188 SN75188	♦ Exar ♦ Motorola National Samsung ♦ SGS-Thomson Signetics ♦ ↑ TI TI	60
	± 30 ± 4 to 6 V TS	No Yes No	± 5 to ± 15 ± 5 V ± 5 to ± 15	RS-232/423, Three-State RS423, Three-State RS-232 Driver	LT1030C M5A26LS29 LT1032C LT1032M	LinearTech Mitsubishi LinearTech ↑ LinearTech	65
	TTL	No	5	Meets IBM 360/370 I/O Interface Specifications RS-232C Compatible RS-232C Line Driver RS-422A Compatible	SN75ALS130 M75188 SG1488 M5M3487	TI Mitsubishi SiliconG Mitsubishi	70
	NO No Yes		5 8 5	RS232C Compatible RS-422 Compatible DS7831 w/o Vcc Clamp	KS5788 DS3587 DS7832 DS8832	♦ Samsung ↑ National ↑ National National	75
				Three-State	N8T09 S8T09	Signetics ↑ Signetics	80
				2-Input NAND, 80 mA 2-Input NAND, 80 Ma	96101C 96101M	National ↑ National	85

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Line Circuits (Cont'd)

No. Per Device	Output	Party Line	Supply Voltage, V	Comments	Device	Source	Line
Line Drivers—Single Ended					(Cont'd)		
4	TTL	Yes	5	4-Input AND, NAND	DS7831 DS8831	† National National	5
	0.15 to 4 V	No	5	IBM360/370	MC3481 MC3485	Motorola Motorola	
	0.8 to 2	± 7	5	RS-422	DS34F87 DS35F87	National National	
		TTL	5	4 RS-232 Drivers	SP234	Sipex-HSD	
	0.8 to 2 V	No	5	IBM 360/370	SN75ALS126	TI	
	0.8 to 2.4	± 9	5	RS-232 with Shutdown	MAX234C MAX234E MAX234M	Maxim Maxim † Maxim	
5	0.8 to 2.4	No	5	5 RS-232 Drivers	AD230	AD (3356)	10
		± 9	5	RS-232 with Shutdown	MAX235C MAX235E MAX235M	* Maxim * Maxim *† Maxim	
		No	5	RS-232	MAX230	Maxim	
6	-0.1 to -14.2	No	5,-5	NTDS Hex Driver, MIL-STD 1397A	GET47521168	◊ GET Eng	15
	NTDS	No	5,-5	NTDS Hex Driver	MOF1305B	† GEC Plessey	
			5,-15	NTDS	MOA268B	† GEC Plessey	
8	—	Yes	—	RS-2326/RS-423A CCITT V.10/X.26	NE5170 UC5170C	Signetics Unitrode	20
	TTL	Yes	5	Three-State (also see index for 74S244, 74LS244, 67S304, 67LS304)	SN54S244	† AMD	
			5		HD74LS241 HD74LS244 MM54C941	Hitachi Hitachi ‡ Micrel	
					SN54LS241	† Motorola	25
					SN54LS244	† Motorola	
					SN74LS241	Motorola	
					SN74LS244	Motorola	
					SN74LS541	Motorola	
					DM54S241	† National	
					DM74LS241	National	
					DM74LS244	National	
					DM74S241	National	
					MM54C941	† National	
					MM74C941	National	
					54LS241	† National	
					74LS241	◊ National	
					74LS244	◊ National	
					74LS241	Signetics	
					74LS244	Signetics	
					74LS541	Signetics	
					SN54ALS244A	*† TI	
					SN54ALS541	*† TI	
					SN54AS241	*† TI	
					SN54AS244	◊*† TI	
					SN54LS241	◊*† TI	
					SN54LS244	◊*† TI	
					SN54S241	† TI	
					SN54S244	† TI	
					SN74ALS241A	* TI	
					SN74ALS244A	* TI	
					SN74ALS541	* TI	
					SN74ALS541-1	* TI	
					SN74AS241	* TI	
					SN74AS244	* TI	
					SN74LS241	TI	
					SN74LS244	* TI	
					SN74LS541	* TI	
					SN74S241	TI	
					SN74S244	TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Line Circuits (Cont'd)

No. Per Device	Output	Party Line	Supply Voltage, V	Comments	Device	Source	Line
Line Drivers—Single Ended					(Cont'd)		
8	TTL	Yes	5	Three-State, Inverting	SN54LS240 † Motorola SN74LS240 Motorola SN74LS540 Motorola DM54S240 † National DM74S240 National 54F240 *† National 54LS240 † National 74F240 * National 74LS240 * National 74LS540 * National 54LS540 † Signetics 74F540 * Signetics 74LS240 Signetics 74LS540 Signetics SN54AS240 *† TI SN54LS240 *† TI SN54LS540 *† TI SN54S240 † TI SN74ALS240A * TI SN74ALS540 * TI SN74ALS540-1 * TI SN74AS240 * TI SN74LS240 * TI SN74LS540 * TI SN74S240 TI	(Cont'd)	5 10 15 20 25
16	TTL	Yes	5	Three-State	SN54LS365A *† TI SN54LS367A *† TI SN74LS365A TI SN74LS367A TI		30
				Three-State, Inverting	SN54LS366A † TI SN54LS368A *† TI SN74LS366A TI SN74LS368A TI		35
Line Drivers—Differential							
1	0.8 to 2	TTL, CMOS	5	Differential Line Driver and Receiver Pair, Meets ST506/412 and ESDI Disk Drive Standards	DS8921A	National	35
2	± 3 V	Yes	± 5	RS422 at Low Data Rates, RS423	AM26LS30C * AMD AM26LS30 Signetics		40
			± 5.5	RS422 at Low Data Rates, RS423	AM26LS30M *† AMD		45
	± 5	No	5	ARINC 429 Standard	RM3182	Raytheon	
	± 5V	No	± 15, ± 5	ARINC 429, 100K bits data rate	HS3182 † Harris DS9638 National UA9638 Rochester		
	CMOS/TTL	No	5		HI-8382C Holt HI-8382CM Holt HI-8382S Holt		
		NO	5	ARINC 429 Standard	HI-8382SM Holt		
		No	5	ARINC 429 Standard			
	High Current CMOS	No	3–15	CMOS 50 mA, 4-Input AND, NAND	MM78C30 ‡ Micrel MM78C30 † National MM88C30 National		
	High Current TTL	No	5	40 mA, Open Collector/Active Pull-up	DS55114 † National DS75114 National SN55114 *† TI SN75114 * TI		
				40 mA, RS422 40 mA, 4-Input AND, NAND	SN75158 TI DM74S140 National DS7830 † National DS8830 National 54S140 † Signetics		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Output	Party Line	Supply Voltage, V	Comments	Device	Source	Line
Line Drivers—Differential					(Cont'd)		
2	High Current TTL	No	5	40 mA, 4-input AND, NAND	74S140 SN54S140 † TI SN55183 † TI SN74S140 † TI SN75183 † TI	Signetics	(Cont'd)
		Yes	5	Three-State	DS7831 † National DS8831 † National	National	5
				DS7831 w/o Vcc Clamp 40 mA, Open Collector/Active Pull-Up, Three-State	DS7832 † National DS55113 † National DS75113 † National SN55113 † TI SN75113 † TI	National	10
	TTL	No	5	40 mA, RS422, Three-State	DS8832 † National SN75159 † TI	National	15
				RS-422	DS8921 † National DS8922 † National DS8923 † National	National	20
				RS-422/423	51998 † Micropac		25
	0.8 to 2	TTL, CMOS	5	RS-485/422	DS9614 † National DS96F177C † National DS96F177M † National DS96F178C † National DS96F178M † National	National	30
				Dual Differential Line Driver and Receiver Pair Dual Line Driver and Receiver Pair	DS8923A † National DS8922A † National	National	35
				High Speed Twisted Pair	μA9638C † TI SN55109A † TI SN75109A † TI	TI	40
	2.5 to 3.5 3.5 mA	No	± 5	Twisted Pair, Level Shifting	MC75S110 † Motorola 75110 † Rochester SN55110A † TI SN75110A † TI		45
				Higher Current 75110	SN75112 † TI		50
				High Speed, EIA-RS422	μA9614 † National μA9638C † National μA9638M † National	National	55
	6.5 mA	Yes	± 5	Triple Line Transmitter	HS245RH † Harris		60
				Quad Differential Line Driver	T7274A † AT&T		
				CMOS, 25 mA	MM78C29 † Micrel MM78C29 † National MM88C29 † National		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Output	Party Line	Supply Voltage, V	Comments	Device	Source	Line	
Line Drivers—Differential					(Cont'd)			
4	20 mA	Yes	5	MIL188-114, Three-State	DS1692 DS3692	† National National	(Cont'd)	
				RS-422, Three-State	AM26LS31C * AMD AM26LS31M 26LS31 *† AMD M5A26LS31 Mitsubishi AM26LS31 Motorola DS26LS31C † National DS26LS31M ♦ National AM26LS31 Signetics AM26LS31C TI SN55ALS192 * TI SN75ALS192 ♦° TI			
	40 mA	No	5	4 ns propagation delay, reduced power	41LG	AT&T	5	
		Yes	5	RS-422, Fed. 1020, Three-State	SN75151 SN75153	TI TI		
	60 mA	No	5	RS-422A, Three-State	DS96172 DS96174	National National	20	
					MC75172B MC75174B SN75172 SN75174	Micro-C Micro-C TI TI		
		Yes	5		μA96172 μA96174	National National		
					41LP 41MG 41MP	AT&T AT&T AT&T		
	160 mA	No	5	RS-485	DPL26LS31X	Dense-Pac	25	
	4 (dual)	20 mA	Yes	5	RS-422, Three-State	DPL26LS31X	Dense-Pac	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold	Common Mode Voltage, V	Supply Voltage, V	Comments	Device	Source	Line
Line Receivers—Single Ended							
2	± 0.1 V (ref)		5	IBM360/370	SN75ALS123	TI	5
			5	Ext. Ref. Adj. 1.5 to 3.5 V with Optional Internal 2.5 V Reference	75143	Rochester	
				Ext. Reference Adjustable from 1.5 to 3.5 V	75140	Rochester	
					75141	Rochester	
					SN75140A	TI	
					SN75141	TI	
	± 2 ± 2.0 0.4 to 2.8	± 15	5	Hysteresis, EIA/MIL	N8T16	Signetics	10
			5	Hysteresis, EIA/MIL	S8T16	Signetics	
			5		μ A9622	National	
		± 25	5		DS9622	National	15
					μ A9627	National	
3	0.8 to 2		5	Photo Coupler Receiver	M753114	Mitsubishi	15
				RS-422A/423A, Three-State	M5M3486	Mitsubishi	
	0.8-2		5	ARINC 429 Dual Line Receiver	H18282	† Holt	20
					HS246RH-8	‡ Harris	
					HS248RH-8	‡ Harris	
	0.7 to 1.7		5	Hysteresis, IBM360/370	HS249RH-8	‡ Harris	25
					DS75124	National	
	0.8 to 2 0.8 to 2.0 V	± 15	5	RS-232 compatible Hysteresis, High-Speed	N8T24	Signetics	30
					SN75124	TI	
					SN75C1406	TI	
					DS55122	† National	
4	± 0.2 ± 3 to ± 9 V $\pm 3/0.8$ to 3	± 7 No	± 5 ± 4.5 to ± 12 5 or 12	RS422A, RS423A Three-State, RS-422/423A RS232C, CCITT V. 24 RS232C, Hysteresis, Fail Safe Option	75122A	Rochester	35
					SN55122	† TI	
					SN75122	TI	
					MC3486	‡ TI	
					M5A26LS32A	Mitsubishi	
	0.75 to 1.5 V		5	RS232C, Programmable Threshold, Hysteresis	DS14C89A	National	40
					DS75154	National	
					75154	Rochester	
					SN75154	TI	
					M75189	Mitsubishi	
5	0.75 to 2.25		5	RS232C, Programmable Threshold, Wider Hysteresis than 1489	MC1489	‡ Motorola	45
					DS1489	National	
					MC1489	Samsung	
					MC1489	SGS-Thomson	
					MC1489	Signetics	
	0.8 to 2 0.8 to 2		5	RS-232, Three-State RS-232, Three-State RS-232C, Three-State RS-485, Three-State	SN55189	* † TI	50
					SN75189	* TI	
					XR1489A	‡ Exar	
					MC1489A	‡ Motorola	
					DS1489A	National	
6	0.97 to 2.65 1.05 to 2.5 1.2 to 1.8 1.3 to 1.7 1.7 5 to 7.5		5	Hysteresis, 120 Ohm System Hysteresis, 120 Ohm System 120 Ohm System, No Hysteresis, NOR Input 120 Ohm System, No Hysteresis, NOR Input No Hysteresis, NOR Input Hysteresis, Interface to CMOS	MC1489A	Samsung	55
					SG1489A	‡ SiliconG	
					SN55189A	* † TI	
					SN75189A	* TI	
					M75188	Mitsubishi	
			5	Hysteresis, Open Collector, Interface to CMOS	M54655	Mitsubishi	60
					M54656	Mitsubishi	
					M75189A	Mitsubishi	
					M75173	Mitsubishi	
					M75175	Mitsubishi	
7	± 15 ± 30 30		5	RS-232 Compatible RS-232C Line Receiver	SN75C1154	TI	65
					KS5789A	‡ Samsung	
					SG1489	SiliconG	
					DS7836	† National	
					DS8836	National	
	5.5 to 8		12	Hysteresis, Open Collector, Interface to CMOS Hysteresis, Interface to CMOS	DS7640	† National	70
					DS8640	National	
					96106	Rochester	
					367A	TeledyneC	
					367M	† TeledyneC	
8			12	Hysteresis, Open Collector, Interface to CMOS Hysteresis, Interface to CMOS	368A	TeledyneC	75
					368C	TeledyneC	
					367B	TeledyneC	
					367C	† TeledyneC	
			12	Hysteresis, Open Collector, Interface to CMOS Hysteresis, Interface to CMOS			80

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

‡ Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold	Common Mode Voltage, V	Supply Voltage, V	Comments	Device	Source	Line	
Line Receivers—Single Ended					(Cont'd)			
6	-1 to 4.5/-1.5 to 13	5	5	NTDS	MOB272	† GEC Plessey	5	
	-1.5 to 5.5/-18.5 to 5.5	5	5	NTDS Type A/B Receiver	GET47521172	† GET Eng		
	0.97 to 2.65	5	5	Hysteresis, 120 Ohm System	DS7837	† National		
	1.05 to 2.50	5	5	Hysteresis, 120 Ohm System	MC3437	Motorola		
					DS8837	National		
					N8T37	Signetics		
7		5	5	IBM360/370	SN75ALS125	TI	10	
					SN75ALS127	TI		
	0.7 to 1.7	5	5	IBM360/370	MC75125	Motorola		
					MC75127	Motorola		
					DS75125	National		
					DS75127	National		
					SN75125	TI		
					SN75127	TI		
8	—	5	5	RS-232C/RS-422A/RS-423A CCITT V.10, V.11, V.28, X.26, X.27	NE5180	Signetics	15	
					NE5181	Signetics		
	0.7 to 1.7	5	5	IBM360/370	MC75128	Motorola		
					MC75129	Motorola		
					DS75128	National		
					DS75129	National	20	
					SN75128	TI		
					SN75129	TI		
Line Receivers—Differential								
2	± 0.01	± 3	± 5	10 mV, MOS Sense, Active Pull-up	DS75208	National		25
	± 0.010	± 3	± 5	10 mV, MOS Sense, Active Pull-up	SN75207	TI		
				75207 with Diode Protected Input Stage	SN75207B	TI		
	± 0.025	± 3	± 5	25 mV, Active Pull-up	MC75107	Motorola		
				25 mV, Active Pull-Up	DS55107	† National		
					DS75107	National	30	
			25 mV, Active Pull-up	SN55107A	† TI			
			25 mV, Open Collector	MC75108	Motorola			
				DS55108	† National			
				DS75108	National			
					SN55108A	† TI	35	
			25 mV, Three-State 55107	DS1603	† National			
				DS3603	National			
			55107A with Diode Protected Input Stage	DS55107	† National			
				DS75107	National			
					SN55107B	† TI	40	
			55108A with Diode Protected Input Stage	DS55108	† National			
				DS75108	National			
				SN55108B	† TI			
				DS55108	† National			
	± 0.2	± 7	5	RS-422, RS-423	μA9639A	National	45	
	± 0.2/0.3	± 10/15	5	Twisted Pair, ± 15 V CMV, Response Control	DS78LS120	† National		
					DS88LS120	National		
		± 15	5	CMOS Compatible, Response Control	DS78C120	† National		
					DS88C120	National		
	± 0.2/0.5	± 7/15	5	RS232, RS422/3	μA9637AC	National	50	
					μA9637AM	† National		
					μA9637AC	TI		
					SN75157	TI		
					DS55115	† National		
	± 0.4	± 7	5	RS-422, RS-423/C and CCITT compatible	μA9639AC	National	55	
	± 0.5/1	± 0/15	5	± 15 V CMV, Response Control	DS55115	† National		
					DS75115	National		
					SN55115	◊† TI		
					SN75115	◊ TI		
		± 3/15	5	Twisted Pair, ± 3/15 V CMV, Response Control	DS7820A	† National	60	
					DS8820A	National		
					SN55182	◊† TI		
					SN75182	TI		
		± 10/15	5	Twisted Pair, ± 15 V CMV, Response Control	DS78C20	† National		
					DS7820	† National	65	
					DS88C20	National		
					DS8820	National		
					L7820	† SGS-Thomson		
	± 0.5/3	± 25	± 12	Adjusts RS232C/MIL-188, ± 25 V CMV, Hysteresis	SN75152	TI		
	0.4 to 2.4	± 25	7		DS9615	National		
					(Continued)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver input Threshold	Common Mode Voltage, V	Supply Voltage, V	Comments	Device	Source	Line
Line Receivers—Differential					(Cont'd)		
2	0.5 to 2.5	± 15	5	RS-422A, RS-423A, RS-232, V.28.	SN75146 DS9637A UA9637	TI National Rochester	5
		± 25	5		DS9639A	National	
	0.8 to 2	± 5	5	ARINC 429 Standard	RM3183 μ A9615 SSM2141	\dagger Raytheon National AD (3345, 3357)	
		± 25	7				
		15	5				
3	TTL, DTL	No	5	Triple Line Receiver	HS246RH HS249RH	Harris Harris	10
		Yes	5	Triple Party-Line Receiver	HS248RH	Harris	10
4			$\pm 15/12-24$	Quad Comparator, 3mV Hysteresis	ESM1600 ESM1602	SGS-Thomson SGS-Thomson	15
			5	RS422A, RS423A	MC3486	\circ TI	
	± 0.025	± 3	± 5	Four 75107, Active Pull-up	MC3450 DS1650 DS3650 MC3450	Motorola \dagger National National TI	
				Four 75108, Open Collector	MC3452 DS1652 DS3652 MC3452	Motorola \dagger National National TI	
	± 0.2	-7,12	5	Three State, RS-422/423, CCITT V.10 and V.11	AM26LS32BC AM26LS32BM $\circ\dagger$ AMD AM26LS34C AM26LS34M \dagger AMD	AMD AMD AMD AMD	
		± 3	5	Three-State, RS422/423	MC3486 DS3486	Motorola National	25
		± 7	± 5	Three-State, RS-422/423	AM26LS32C AM26LS32M $\circ\dagger$ AMD AM26LS32 DS26LS32AM $\circ\dagger$ National DS26LS32C DS26LS32M $\circ\dagger$ National AM26LS32AC AM26LS32AM \dagger TI	AMD AMD Motorola National National TI TI	30
			5	Three State, RS-422/423	μ A3486	National	35
	± 12		5	RS-422/485	μ A96173 μ A96175	National National	40
				RS-485/422	DS96F173 DS96F175	National National	
				Three-State, RS-422A/RS-423A	SN75173 SN75175 SN55173 SN75173 SN75175	Motorola Motorola \dagger TI TI TI	
				Three-State, RS-422A/423A/485, CCITT V.10, V.11, V.26, V.27	SN55ALS195 SN75ALS195	\circ TI \circ TI	
	± 0.5	± 15	± 5	Three-State	AM26LS33C AM26LS33M \dagger AMD DS26LS33C DS26LS33M \dagger National AM26LS33AC AM26LS33AM \dagger TI	AMD AMD National National TI TI	50
	± 0.8	-12, ± 7.5	$\pm 5,-5$	NTDS	MOF1623B	\dagger GEC Plessey	55
	0.20	± 4	5	4 ns propagation delay, reduced power	41LF	AT&T	
	0.4 to 2	± 25	7	RS-422/423	DS26LS32AC DS26LS33AC	National National	
	0.8 to 2		5		41LR 41LS 41LT 41MF	AT&T AT&T AT&T AT&T	60

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 \dagger Mil Temp Range (-55° to 125°C) \dagger High Rad Resistance \circ Typical Value \circ Behavioral Model Available \circ Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold	Common Mode Voltage, V	Supply Voltage, V	Comments	Device	Source	Line
Line Receivers—Differential					(Cont'd)		
4	0.8 to 2	5	7	Quad Differential Line Receiver	41MR	AT&T	(Cont'd)
					41MT	AT&T	
					T7275B	AT&T	
					DS34C86	National	
					SN75ALS197	TI	
					SN75ALS199	TI	
					RS-422/423	National	
					DS26C32C	National	
					DS34F86	National	
					DS35F86	National	
4 (dual)	± 0.2	± 7	± 5	Three-State, RS-422/423	DS96173	National	10
					DS96175	National	
					RS-422/423	National	
					DS26F32C	National	
					DS26F32M	† National	
					DS96F173C	National	
					DS96F173M	† National	
					DS96F175C	National	
					DS96F175M	† National	
					SN75ALS193	* TI	
8	0.8 to 2.0	7, -7	5	Three-State, RS-422A, RS-423A, RS-485, CCITT V.10, V.11, X.26, and X.27	SN55ALS193	* TI	15
					SN75ALS193	* TI	
					DPL26LS32X	Dense-Pac	
					UC5180	Unitrode	
					UC5181	Unitrode	
					ULN8510EP	Allegro Micro	
					ULN8511	Allegro Micro	
					RS232C and RS423A; CCITT V.10, V.28 and V.11		
					EIA Receiver, Low Speed		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line
Line Transceivers—Single Ended							
1	0.8 to 2	TTL	5	RS-232-C Driver and Receiver RS-232C, Three-State RS-485, Three-State	SN75155 M751701 M75176 M75177 M75178 M75179	TI Mitsubishi Mitsubishi Mitsubishi Mitsubishi Mitsubishi	5
2	0.8 to 1.4	TTL/CMOS	5	Three-State, Dual RS-232 Driver/Receiver	LT1080C LT1080M LT1081C LT1081M	LinearTech † LinearTech LinearTech † LinearTech	10
	0.8 to 2	TTL	5	RS-422A, Three-State	M5M34050 M5M34051	Mitsubishi Mitsubishi	
3	0.8 to 2	TTL/CMOS	5	Three-State, Triple Driver/Receiver	LT1039C	LinearTech	
	0.8 to 2.0	TTL/CMOS	5	Three-State, Triple Driver/Receiver	LT1039M	† LinearTech	
4			5	Two Drivers/Two Receivers	SN75ALS053 SN75ALS085	TI TI	15
		TTL	5	IEEE 896.1	SN75ALS057	TI	
	0.05 to 2.5	TTL	5	Open Collector, 1 V Hysteresis	DS8838	National	
	0.21 to 1.84	TTL	5	Open Collector (Inverting), Common Enable	96103	Rochester	
	0.4 to 2.05	TTL	5	Open Collector, Hysteresis	AM26S12AC AM26S12AM	AMD † AMD	20
	0.5 to 2	TTL	5	Bus Transceiver, Tridirectional, Three-State	SN54LS442	† TI	
	0.6 to 2	TTL	5	Bus Transceiver, Tridirectional, Three-State	SN74LS442	TI	
	0.6 to 2.0	TTL	5	General Purpose Interface Bus, Open Collector, for MOS Input	MC3446A	Motorola	
	0.8 to 1.8	TTL/MOS	5	General Purpose Interface Bus, Bidirectional Bus Transceiver, Three-State	AM3448A MC3448A	AMD Motorola	25
	0.8 to 2		5	Two RS-232 Drivers, Two RS-232 Receivers	AD231 AD233	AD AD	(3356) (3356)
				Two RS-232 Drivers, Two RS-232 Receivers	AD232	AD	(3356)
		TS	5		LT1180C LT1180I LT1180M LT1181C LT1181I LT1181M	LinearTech LinearTech † LinearTech LinearTech LinearTech † LinearTech	30
		TTL	5	Bus Transceiver Three-State, Inverting RS-232C, 2 Drivers/2 Receivers RS-422A, Three-State Three-State, Hysteresis	SN54LS242 NJU6403 M66805 SN74ALS242B SN74ALS243A SN74LS242 SN74LS243	† Motorola ♦ NJR Mitsubishi * TI * TI * TI * TI	(3595) 40
				Two RS-232 drivers and two RS-232 receivers. 2 RS-232 Drivers/2 Receivers	μPD4711 SP231 SP232 SP233	NEC Sipex-HSD Sipex-HSD Sipex-HSD	45
			6	Futurebus Trapezoidal Transceiver	DS3897	National	
		TTL/CMOS	7	Bus Transceiver, Three-State	MC3446	♦ TI	
	0.8 to 2.0	TTL	5	Bus Transceiver Three-State, Inverting	SN54LS243 SN54LS242B SN54LS243A SN54LS242 SN54LS243	† Motorola *† TI † TI ♦*† TI ♦*† TI	50
				General Purpose Interface Bus, Open Collector, 100 mA Output	MC3440A MC3441A DS3662 DS7641 DS8641	Motorola Motorola National † National National	55
				Line Transceiver with Driver Enable. Line Transceiver with Separate Enable for Driver and Receiver. Three-State, Bus Transceiver Three-State, Bus Transceiver, Parity Generator/Checker	MC34051 MC34050 SFC2915A AM2917AC SFC2917	Motorola Motorola SGS-Thomson AMD SGS-Thomson	60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

♦Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line
Line Transceivers—Single Ended							(Cont'd)
4	0.8 to 2.0	TTL	5	Three-State, Hysteresis	HD74LS242 SN74LS242 SN74LS243 DM74LS243 74LS242 74LS243	Hitachi Motorola Motorola National Signetics Signetics	(Cont'd) 5
				Three-State (Inverting)	MC8T26A DS8T26A DS8T26AM N8T126 N8T127 N8T26A S8T126 S8T127	Motorola National † National Signetics Signetics Signetics † Signetics † Signetics	10
				Three-State, Inverting	SN54AS242 °† Ti SN74AS242 ° Ti SN74AS243 ° Ti		15
				Three-State (Non-Inverting)	MC8T28 DS8T28 DS8T28M 8T28 N8T129 N8T28 S8T128 S8T129	Motorola National † National Rochester Signetics Signetics † Signetics † Signetics	20 25
	0.8 to 2.4	± 9	5	Optically Isolated, Dual RS-232 Driver/Receiver Chip	MAX251C MAX251E MAX251M MAX252C MAX252E	Maxim Maxim † Maxim Maxim Maxim	30
				Optically Isolated, Dual RS-232 Driver/Receiver with DC-to-DC Converter	MAX250C MAX250E MAX250M	Maxim Maxim † Maxim	
				Two Independent RS-232 Drivers and 2 Receivers	MAX232C MAX232E MAX232M MAX233C MAX233E	Maxim Maxim † Maxim ° Maxim ° Maxim	35
			5, 12	Independent RS-232 Drivers and Receivers	MAX231C MAX231E MAX231M	Maxim Maxim † Maxim	40
	0.8 to 2.4V	± 5	5	2 Independent RS-232 Drivers and Receivers-high impedance with power off 2 Independent RS-232 Drivers and Receivers-high impedance with Power off 2 Independent RS-232 Drivers and 2 Receivers-low power plus shutdown	MAX232A MAX233A MAX222	°† Maxim °† Maxim °† Maxim	
		± 5V	5	Identical to MAX222 with three-state outputs Identical to MAX232A with (-) input threshold on one receiver 2 Independent RS-232 Drivers and 2 Receivers-low	MAX242 MAX243 MAX220	°† Maxim °† Maxim °† Maxim	45
	0.97 to 2.65	TTL	5	Open Collector, 1 V Hysteresis	DS7838	† National	
	1.05 to 2.5	TTL	5	Inverting 7833/8833	DS7835 DS8835	† National National	50
	1.05 to 2.50	TTL	5	Inverting 7839/8839	DS7834 DS8834 N8T34	† National National Signetics	
				Three-State, NOR Gate, Transmit Disable, Hysteresis	DS7839 DS8839	† National National	55
				Three-State, T/R Disables, Hysteresis	DS7833 DS8833	† National National	
	1.5 to 2.4	TTL	5	Q-bus Compatible 2907	AM2908M	† AMD	
	1.5 to 3.2	TTL	5	Open Collector, 100 mA Output	SN55138	°† Ti	
	1.6 to 1.8	TTL	5	Open Collector, Hysteresis	AM26S12C AM26S12M	AMD † AMD	60
	1.6 to 2.3	TTL	5	Open Collector, 100 MA Output, Parity Generator/Checker Q-bus Compatible 2907	AM2907C AM2908C	AMD AMD	
	1.6 to 2.4	TTL	5	Open Collector, 100 mA Output	AM26S10M AM26S11M μA9640M	† AMD † AMD † National	65

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

°Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line
Line Transceivers—Single Ended					(Cont'd)		
4	1.6 to 2.4	TTL	5	Open Collector, 100 mA Output	DS26S10M DS26S11M	† National † National	5
	1.75 to 2.25	TTL	5	Open Collector, 100 mA Output	AM26S10C AM26S11C MC26S10 μA9640C DS26S10C DS26S11C AM26S10C AM26S11C	† National AMD Motorola National National National TI TI	
	1.8 to 2.9	TTL	5	Open Collector, 100 mA Output	SN75138	TI	
	0.8 0.8 to 1.4	TTL TTL/CMOS	± 15 5	Three Drivers/Three Receivers Universal Level Translator/RS-232 Line Receiver	SN75C1406 LTC1045C LTC1045M	TI LinearTech † LinearTech	
6	0.8 to 2	TTL	5	RS-232C, 3 Drivers/3 Receivers Three RS-232 drivers and three RS-232 receivers.	MC145407 NJU6402B μPD4713	Motorola ◊ NJR NEC	15
	0.8 to 2	TTL	5	Four RS-232 Drivers, Three RS-232 Receivers 4 RS-232 Drivers/3 Receivers	AD236 SP236	AD Sipex-HSD	
	0.8 to 2.4	± 9	5	Four Independent RS-232 Drivers and 3 Three-State Receivers with Shutdown	MAX237C MAX237E MAX237M	Maxim Maxim † Maxim	
	—	TTL/CMOS	5	General Purpose Interface Bus	DS75160A DS75161A DS75162A	National National National	
7	0.5 to 2	TTL	5	Bidirectional Bus Transceiver, Three-State Bidirectional Bus Transceiver, Open Collector	DP8304 54LS641 54LS642 74LS641 74LS641-1 74LS642 74LS642-1 SN54LS641 SN54LS642 SN54LS644	National † Signetics † Signetics Signetics Signetics Signetics Signetics ◊† TI ◊† TI ◊† TI	30
	0.5 to 2.0	TTL	5	Bidirectional Bus Transceiver, Three-State	DP7304B DP7308 DP8303 DP8304B DP8307 DP8308 SN54ALS245A SN54ALS645A SN54LS640 SN54LS645	† National † National National National National National *† TI † TI ◊† TI ◊† TI	
	0.6 to 2	TTL	5	Bidirectional Bus Transceiver, Open Collector	SN74LS641 SN74LS641-1 SN74LS642 SN74LS642-1 SN74LS644 SN74LS644-1	TI TI TI TI TI TI	
	0.6 to 2.0	TTL	5	Bidirectional Bus Transceiver, Three-State	74LS640 74LS640-1 74LS645 SN74LS245 SN74LS623 SN74LS640 SN74LS640-1 SN74LS645 SN74LS645-1	Signetics Signetics Signetics TI * TI TI TI TI TI	
8	0.7 to 2	TTL	5	Bidirectional Bus Transceiver, Open Collector Bidirectional Bus Transceiver, Three-State	SN54LS641 SN54LS642	† Motorola † Motorola	65
	—	—	—	—	SN54LS645 54LS245	† Motorola † National	
	—	—	—	—	—	—	
	—	—	—	—	—	—	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Line Circuits (Cont'd)

No Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line
Line Transceivers—Single Ended					(Cont'd)		
8	0.7 to 2.0	TTL	5	Bidirectional Bus Transceiver, Three-State	SN54LS245 † Motorola SN54LS640 † Motorola	(Cont'd)	
	0.8 to 2		5	Five RS-232 Drivers, Three RS-232 Receivers Four RS-232 Drivers, Four RS-232 Receivers Three RS-232 Drivers, Five RS-232 Receivers	AD237 AD (3356) AD238 AD (3356) AD239 AD (3356)		5
		TS	5	3 Driver/5 Receiver, RS-232	LT1133C LinearTech LT1133I LinearTech LT1133M † LinearTech LT1137C LinearTech LT1137I LinearTech LT1137M † LinearTech		10
				3 Drivers/5 Receivers, RS-232	LT1141C LinearTech LT1141I LinearTech LT1141M † LinearTech		
				4 Driver/4 Receiver, RS-232	LT1134C LinearTech LT1134I LinearTech LT1134M † LinearTech		15
				4 Drivers/4 Receivers, RS-232	LT1139C LinearTech LT1139I LinearTech LT1139M † LinearTech		20
				5 Driver/3 Receiver, RS-232	LT1132C LinearTech LT1132I LinearTech LT1132M † LinearTech LT1135C LinearTech LT1135I LinearTech LT1135M † LinearTech		25
				5 Drivers/3 Receivers, RS-232	LT1138C LinearTech LT1138I LinearTech LT1138M † LinearTech LT1140C LinearTech LT1140I LinearTech LT1140M † LinearTech		30
		TTL	5	Bidirectional Bus Transceiver, Open Collector	HD74LS641 Hitachi HD74LS642 Hitachi SN74LS641 Motorola SN74LS642 Motorola		35
				Five RS-232 drivers and three RS-232 receivers. Four RS-232 drivers and four RS-232 receivers. General Purpose Interface Bus	μPD4715 NEC μPD4712 NEC SN75163B TI SN75164B TI		40
				RS-232C, 3 Drivers, 5 Receivers RS-422A, Three-State Three RS-232 drivers and five RS-232 receivers. 3 RS-232 Drivers/5 Receivers 4 RS-232 Drivers/4 Receivers 5 RS-232 Drivers/3 Receivers	NJU6401B ♦ NJR (3595) M66806 Mitsubishi μPD4714 NEC SP239 Sipex-HSD SP238 Sipex-HSD SP237 Sipex-HSD		45
			6	Futurebus Trapezoidal Transceiver Trapezoidal Bus Transceiver	DS3896 National DS3862 National		
	0.8 to 2.0	TTL	5	Bidirectional Bus Transceiver, Three-State	HD74LS243 Hitachi HD74LS645 Hitachi MC54F245 † Motorola MC74F245 Motorola SN74LS245 Motorola SN74LS640 Motorola SN74LS645 Motorola DM74LS245 National DS3667 † National 74LS245 ♦ National N8T125 Signetics S8T125 † Signetics 74LS245 Signetics SN74ALS245A ♦ TI SN74ALS645A TI SN74AS245 ♦ TI SN74LS646 ♦ TI SN74LS648 ♦ TI		50
				General Purpose Interface Bus	MC3447 Motorola SN75ALS163 TI		65

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Line Circuits (Cont'd)

No. Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line					
Line Transceivers—Single Ended					(Cont'd)							
8	0.8 to 2.0	TTL	5	General Purpose Interface Bus	SN75160B	TI	(Cont'd)					
					SN75161B	TI						
					SN75162B	TI						
					SN75ALS160	TI						
					SN75ALS161	TI						
					SN75ALS162	TI						
	0.8 to 2.4	± 9	5	Four Independent Drivers and 4 Receivers	SN75ALS164	TI	5					
					SN75ALS165	TI						
					MAX238C	Maxim		10				
					MAX238E	Maxim						
					MAX239C	Maxim		15				
					MAX239M	† Maxim						
9	0.8 to 2	TS	5	Four RS-232 Drivers, Five RS-232 Receivers 4 Driver/5 Receiver, RS-232	AD241	AD	(3356)					
					LT1136C	LinearTech						
					LT1136I	LinearTech						
					LT1136M	† LinearTech						
					LT1131C	LinearTech						
					LT1131I	LinearTech						
	0.8 to 2.4	± 9	5	4 RS-232 Drivers/5 Receivers	LT1131M	† LinearTech	20					
					SP241	Sipex-HSD						
					MAX241C	Maxim		25				
					MAX241E	Maxim						
					0.8 to 2	TTL		5	5 RS-232 Drivers/5 Receivers	SP230	Sipex-HSD	(3356)
										AD235	AD	
LT1130C	LinearTech											
LT1130I	LinearTech											
LT1130M	† LinearTech											
SP235	Sipex-HSD											
10	0.8 to 2	TTL	5	5 RS-232 Drivers/5 Receivers	MAX236C	Maxim	30					
					MAX236E	Maxim						
					MAX236M	† Maxim						
					MAX240C	Maxim						
					MAX240E	Maxim						
					MAX240E	Maxim						
	0.8 to 2.4	± 9	5	Five Independent RS-232 Drivers and 5 Three-State Receivers with Shutdown	MAX236C	Maxim	35					
					MAX236E	Maxim						
					MAX236M	† Maxim						
					MAX240C	Maxim						
					MAX240E	Maxim						
					MAX240E	Maxim						
Line Transceivers—Differential												
1	± 0.2	TTL	5	Designed to meet proposed EIA Standard RS485	DS3695	° National	35					
					DS3696	National						
					DS3697	National						
					DS3698	National						
					SN65176B	TI						
					SN75061	TI						
	± 0.5/± 1 V	TTL	5	Independent Driver and Receiver, RS-422A/485, CCITT V.11, X.27	SN75062	TI	40					
					SN75116	† TI						
					SN75116	TI						
					SN75118	TI						
					SN75119	TI						
					SN75117	TI						
0.8 to 2	TTL	5	Bidirectional Bus Repeater, Three-State, RS-485/422A	SN75117	TI	45						
				μA96177	National							
				μA96178	National							
				μA96176	National							
				75176	Rochester							
				SN75ALS176	TI							
2	0.2	TTL/ECL	5	Contains two ECL-to-TTL converters and two TTL-to-ECL converters	SN75176B	TI	50					
					SN75177B	TI						
					SN75178B	TI						
					TL3695	TI						
					TL3695	TI						
					TL3695	TI						
	0.8 to 2	± 7	5	RS-485/422	SN75179B	TI	55					
					SN55116	† TI						
					SN75116	TI						
					SN75118	TI						
					SN75119	TI						
					SN75117	TI						
0.8 to 2	± 7	5	Two RS-232 drivers and receivers; two RS-422 drivers and receivers. Bus Transceiver	μA96176	National	60						
				75176	Rochester							
				SN75ALS176	TI							
				SN75176B	TI							
				SN75177B	TI							
				SN75178B	TI							
0.8 to 2	± 7	5	Two RS-232 drivers and receivers; two RS-422 drivers and receivers. Bus Transceiver	TL3695	TI	60						
				TL3695	TI							
				TL3695	TI							
				TL3695	TI							
				TL3695	TI							
				TL3695	TI							
0.8 to 2	± 7	5	Two RS-232 drivers and receivers; two RS-422 drivers and receivers. Bus Transceiver	DS75176A	National	60						
				DS75176AT	National							
				SP301	Sipex-HSD							
				DS96176	National							
				DS96177	National							
				DS96177	National							

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

° Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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INTERFACE—Line Circuits (Cont'd)

No Per Device	Receiver Input Threshold, V	Output	Supply Voltage, V	Comments	Device	Source	Line
Line Transceivers—Differential					(Cont'd)		
2	0.8 to 2	TTL	5	Designed to meet EIA Standards RS422A and RS485	SN75AS030	Ti	(Cont'd)
					SN75AS031	Ti	
					RS-422/485 driver/receiver with separate enables	SN75ALS180	
				7	RS-485/422	DS16F95 † National DS36F95 National	
4	0.8 to 2	BiCMOS TTL	5	Four RS-232 drivers and receivers and two RS-422 drivers and receivers.	SP302	Sipex-HSD	5
					41MK	AT&T	
					41ML	AT&T	
					41MM	AT&T	

INTERFACE

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ◦Available in Surface Mount Package
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INTERFACE—Memory Drivers

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Asynchronous SCSI Interface (ASI)	DP5380	National		Disk Drive, Winchester Thin Film Head Servo Preamp	CS116	Cherry Semi	35	Enhanced Asynchronous SCSI Interface (EASI)	DP8490	National	
Bank Switch	DS1222	◊ Dallas		Disk Head Amplifier/Receiver	MB4316	Fujitsu		Floppy Disk Drive Read Amplifier System	NJM3201	NJR	
Bubble Memory Predriver	SI7250	Siliconix		Disk Head Peak Detector for Head Position Control	MB4319	Fujitsu			NJM3470	NJR	
Buffer Manager with ECC	9802A	Stac		Disk Memory Read/Write	μPC751	◊ NEC			NJM3470A	NJR	
Burst Mode DRAM Controller	74F1766	Signetics	5	Disk Pulse Detector and Embedded Servo	DP8468B	National		Floppy Disk Read/Write Amplifier	MB4120	Fujitsu	75
Cache Memory and Controller (16K memory)	C16K32	Inova		DMA Controller/Buffer Manager with ECC	9820a	Stac	40	Floppy Disk VFO	MB4107A	Fujitsu	
Data Compression Coprocessor	9704	Stac		DRAM Controller/Driver (4M, 1M, 256K, 64K control)	AM29C668	◊ AMD			MB4108A	Fujitsu	
Data Compression Coprocessor (for 1/4" streaming tape cartridge)	9703	Stac			AM29C668-1	◊ AMD		Floppy Disk Write Controller/Head Driver	MC3469	Motorola	
Data Separator (for disk drives)	DP8465	National		DRAM Controller with Refresh Timing, 64K	TMS4500A	Ti			MC3471	◊ Motorola	
Data Synchronizer (for disk drives)	DP8455	National	10	DRAM Controller, 1 MB and 4 MB Devices	M66200A	Mitsubishi		Hard Disk Controller (PC XT/AT Combo)	SSI32C260	SiliconSys	80
Data Synchronizer (1,7 RLL Endec)	SSI32D539	SiliconSys	(3686)	DRAM Driver, 11-Bit (for 4Mx1 or 4Mx4 DRAMs)	AM29C676C	AMD	45		SSI32C4650	SiliconSys	(3686)
Data Synchronizer (2,7 RLL Endec)	DP8469	National		Driver, 11-Bit DRAM	AM2976C	AMD			SSI32C9000	SiliconSys	(3686)
	SSI32D5381	SiliconSys		Dynamic Memory Controller (for 256K DRAMs)	MC74F2968A	Motorola		Hard Disk Controller (up to 1.5 Mbit/s)	SSI32B451	SiliconSys	
Direct Memory Access Controller (8 MHz)	HD63450-8	Hitachi		Dynamic Memory Controller (for 16K, 64K, 256K, and 1-Megabit DRAMs)	MC74F29368	◊ Motorola		Hard Disk Data Separator /Data Synchronizer (1, 7 RLL ENDEC)	SSI32D5362A	SiliconSys	(3686)
Direct Memory Access Controller (10 MHz)	HD63450-10	Hitachi	15	Dynamic Memory Controller (for 256K DRAMs)	AM2968A	AMD			SSI32D5321	SiliconSys	85
Direct Memory Access Controller (12.5 MHz)	HD63450-12	Hitachi		Dynamic Memory Controller (for 80486 microprocessor)	Am29C668	* AMD	50	Hard Disk Data Separator /Data Synchronizer (2,7 RLL ENDEC)	SSI32D5321	SiliconSys	
Disk Drive Data Qualifier	AD891	AD	(3353)	Dynamic Memory Controller, 1 Megabit	AM29368	AMD		Hard Disk Drive Bus Interface for PC	M66802	Mitsubishi	
Disk Drive Data Recovery Element	AD890	AD	(3353)	Dynamic RAM Controller	TMS34061	◊ Ti		Hard Disk MFM Data Separator	SSI32D534A	SiliconSys	(3686)
Disk Drive, Disk Data Controller	DP8466	National		Dynamic RAM Controller/Driver (for 256K RAMs)	DP8419X	National		Hard Disk Servo Positioning	SSI32H4631	SiliconSys	(3686)
Disk Drive, Disk Data Separator	SSI32D531	SiliconSys	20	Dynamic RAM Controller/Driver (microCMOS programmable for up to 256K DRAMs)	DP8420A	National		Hard Disk 2,7 RLL Data Separator with Write Pre-Compensation	SSI32D5351	SiliconSys	
	SSI34D441	SiliconSys	(3686)		DP8421A	National		Hard Dist 2,7 RLL Data Separator, 7.5 to 15 Mb/s	SSI32D5322	SiliconSys	90
Disk Drive, Disk Pulse Detector	DP8464	National			DP8422A	National		Head Driver, 12-Bit Pre-Head Driver	M66320	Mitsubishi	
Disk Drive, Encoder/Decoder, 2, 7	DP8462	National		Dynamic RAM Controller/Driver, Multimode	SN74S409-2	AMD	55	IBM PC/XT/AT Floppy Disk Formatter/Controller	MCS3201	◊ Motorola	
	DP8463	National		Dynamic RAM Controller Interface Circuit (for the iAPX 286 microprocessor)	DP84532	National		Magnetic Disk Encoder/Decoder (2-7 code)	HD153009	Hitachi	
Disk Drive, Flexible Disk Support Circuit (port expansion for 8048 microprocessor)	SSI34B580	◊ SiliconSys	25	Dynamic RAM Controller Interface Circuit (for the NS32332 microprocessor)	DP84512	National			HD153013	Hitachi	
Disk Drive, Flexible Disk, 2-Channel	SSI34P570	◊ SiliconSys		Dynamic RAM Controller Interface Circuit (for the 68020 microprocessor)	DP84522	National	60	Magnetic Disk Head Amplifier (4-channel)	MB4114A	Fujitsu	95
Disk Drive, Hard Disk Controller	AM9580	AMD		Dynamic RAM Controller (up to 1 Mbit)	54F968	† National		Magnetic Disk Head Amplifier, 4-Channel (110v/v)	MB4117-4	Fujitsu	
Disk Drive, MFM Data Separator	DP8460	National			74F968	National			MB4118-4	Fujitsu	
Disk Drive, Preamplifier (4, 6 and 8 head)	XR511	Exar		Dynamic RAM Controller, 1M RAMs	MB1430	Fujitsu		Magnetic Disk Head Amplifier, 4-Channel (35v/v)	MB4111	Fujitsu	
Disk Drive Read Channel (enhanced)	VM443	VTC	30		MB1431	Fujitsu			MB4113	Fujitsu	
Disk Drive Read Channel (40 mbit/s data transfer rate)	AD897	AD	(3353)	Dynamic RAM Controller, 256K	SN74ACT4503	Ti	65	Magnetic Disk Head Amplifier, 4-Channel (9v/v)	MB4112	Fujitsu	100
Disk Drive Servo Preamplifier (ferrite head)	VM201	VTC			THCT4502B	* Ti			MB4115	Fujitsu	
Disk Drive VCM Driver, 4:1 Gain Switch, Auto Head Park	EL2026	Elahtec		Dynamic RAM Controller (40 MHz for 256K, 1M, and 4M DRAMs)	KS84C31	Samsung		Magnetic Disk Read/Write Amplifier for HDD (8-channel)	MB4116	Fujitsu	
Disk Drive, Winchester Servo Preamp	CS101A	Cherry Semi			KS84EC30	Samsung			MB4125	Fujitsu	
				Dynamic RAM Controller (40 MHz for 256K, 1M, 4M, and 16M DRAMs)	KS84C32	Samsung			MB4126	Fujitsu	
				Encoder/Decoder, 2,7 RLL and VFO (hard disk drive)	HD153011	Hitachi	70	Mass Storage Read Channel Devide (for Winchester Hard Disks)	ATT91C010	AT&T	(3388)
								Memory Controller, Page/Interleave (part of PC-AT chipset)	SAB82C212	◊ Siemens	105
								Memory Driver	SG55325	◊ † SiliconG	
								Memory Driver, FIFO RAM Controller	N8X60	Signetics	
									S8X60	† Signetics	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Memory Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Memory Driver, Dual 600 mA Sink/Source	DS55325 DS75325 SG75325	† National National ◊ SiliconG		Read/Write Amplifier, 4-Channel (for Winchester drives, includes damping resistor)	SG510AR4 SG510A4	◊ SiliconG ◊ SiliconG		Winchester Disk Read/Write Preamplifier (4 channels)	DP117-4 DP117-4R	National National	75
Memory Driver, Quad, 600 mA Sink	SG55326 SG55327 SG75326 SG75327	† SiliconG † SiliconG ◊ SiliconG ◊ SiliconG	5	Read/Write Bus Driver/Receiver	MB4313	Fujitsu	45	Winchester Disk Read/Write Preamplifier (6 channels)	DP117-6 DP117-6R	National National	
MOS Clock Driver	MH0007 MH0007C	† National National		Read/Write Device, 2 or 4-Channel Ferrite/MIG Recording Heads	SSI32R1201	SiliconSys		Winchester Disk Servo Preamplifier (provides termination, gain and impedance buffering)	DP2580	National	
MOS Dynamic Memory Controller	2964B	Signetics	10	Read/Write Device, 4 or 8-Channel Ferrite/MIG Recording Heads	SSI32R518 SSI32R518R	SiliconSys SiliconSys	(3685)	Winchester Ferrite Head Read/Write Amplifier	SSI32H566R	SiliconSys	(3686)
MOS Dynamic RAM Controller	MB1422A 8202A 8203 8205	Fujitsu Intel Intel Intel		Read/Write Device, 10-Channel (for ferrite/MIG recording heads)	SSI32R5161R	SiliconSys	(3685)	Winchester Read/Write Amplifier (for thin-film heads)	SSI32R524	SiliconSys	(3685)
MOS Dynamic RAM Controller/Driver	DP8408 DP8417 DP8418	National National National	15	Read/Write Device, 14-Channel Thin Film	SSI32R5121	SiliconSys	50	Winchester Read/Write Circuit (6 channels)	DP5016	National	80
MOS Dynamic RAM Controller/Driver, Multimode	DP8408 DP8409	National National		Read/Write Device, 14-Channel Thin Film (with 180 ohm damping resistor)	SSI32R5121R	SiliconSys		Winchester Read/Write Circuit (6 channels, internal damping resistance)	DP5016R	National	
MOS Dynamic RAM Controller/Driver, 16-Bit	DP8428 NS32828	National National	20	Read/Write Device (2, 4, or 6 channel)	CS510A	Cherry Semi		Winchester Read/Write Circuit (8 channels)	DP5018	National	
MOS Dynamic RAM Controller/Driver, 32-Bit	DP8429 NS32829	* National National		Read/Write Device (2, 4, or 6 channel, 750 ohm damping resistor)	CS510AR	Cherry Semi		Winchester Read/Write Circuit (8 channels, internal damping resistance)	DP5018R	National	
MOS Dynamic RAM Controller Interface Circuit	DP84322	National		Refresh Timer, Input Selectable	SN74ALS6300	* TI		Winchester Servo Preamp (for ferrite heads)	CS201A	Cherry Semi	85
MOS Dynamic RAM Controller, Two Port	74F764	* Signetics	25	RISC Memory Controller/Driver	VL86C110	VLSI Tech	55	Winchester Thin Film Servo Head Read/Write Amplifier	SSI32H523R	SiliconSys	(3686)
MOS Dynamic RAM Programmable Refresh Timer	DP84300	National		Servo Motor Driver (for hard disk)	SSI32H6240	SiliconSys	(3686)	Dual AND TTL to MOS Driver (NMOS memory interface)	μA9643C 75363	National Rochester	
Paged Memory Management Unit	68851-12 68851-16 MC68851	Micro-C Micro-C * Motorola		Tape Controller for QIC-1350 Tape Drives (2-chipset)	QICSET1350	Stac		Dual MOS Clock Driver	DS0025 DS0025C DS0026 DS0026C DS0056 DS0056C 75369	† National National † National National † National National Rochester	90
Preamplifier (for hard disk servo positioning motor)	SSI32H6110	SiliconSys	(3686)	Tape Controller for QIC-525 Tape drives (2-chipset)	QICSET525	Stac		Dual TTL to MOS Driver (MOS memory interface)	DS75361 DS75362	National National	95
Programmable Active Filter (for hard disk)	SSI32F8011 SSI32F8020	SiliconSys SiliconSys	(3686) (3686)	Thin Film Read/Write Device (10-Channel)	SSI32R2010R	SiliconSys	(3685)	Quad MOS Clock Driver	DS3245	National	
Pulse Detector and Data Separator (1, 7 RLL ENDEC)	SSI32P4621 SSI32P4720	SiliconSys SiliconSys	(3685)	Thin Film Read/Write Device (6, 7, 8-Channel)	SSI32R502R	SiliconSys	60	Quad MOS Memory I/O Register	DS3647	National	
Pulse Detector (MFM and RLL encoded signals)	SSI32P549	SiliconSys	(3685)	Time Base Generator (for hard disk data recovery)	SSI32D4661	SiliconSys	(3686)	Quad Multiplexer/Driver, for MOS Systems	DS1648 DS1678 DS3648 DS3678	† National † National National National	100
Pulse Detector (with programmable filter for Hard Disk)	SSI32P3000	SiliconSys	(3685)	Time Base Generator (for hard disk recovery)	SSI32D4662	SiliconSys	(3686)	Quad NAND TTL to MOS Driver (MOS memory interface-clock driver)	DS75365 3207A 3207A-1	National Signetics Signetics	105
QIC Tape Formatter (MFM tape formats)	9820	Stac		Time Base Generator For Use in Constant Density Recording	SSI32D4660	SiliconSys	(3686)	Quad NMOS Memory Driver	DS1674 DS3674	† National National	
Read Data Processor (detects and qualifies all MFM and RLL encoded read signals)	CS541	Cherry Semi		VCM Servo Controller, Hard Disk Drive	HA166007	Hitachi	35	Quad TTL to NMOS Memory Driver (for 2105, 2107, etc.)	μA9645C	National	
Read Data Processor (detects and qualifies MFM and RLL signals in disk drives)	SG541	SiliconG		Video RAM Controller/Driver (up to 1 Mbit)	DP8521 DP8521A	National National	65	Hex Inverter/MOS Driver, Disable Causes Logic 1 State	DS16149 DS16179 DS36149 DS36179	† National † National National National	110
Read Pulse Detector, Hard Disk Drive	HA166005 HA166006	Hitachi Hitachi	40	Video RAM Controller/Driver (up to 256 kbits)	DP8520A	National		Hex Inverter/MOS Driver, Three-State	DS1649 DS1679 DS3649 DS3679	† National † National National National	115
Read/Write Amplifier, Hard Disk Drive	HA166008	Hitachi		Video RAM Controller/Driver (up to 256K bits)	DP8520	National					
				Video RAM Controller/Driver (up to 4 Mbits)	DP8522 DP8522A	National National	70				
				Winchester Disk Driver Differential Amplifier	SSI32H101	SiliconSys	(3686)				
				Winchester Disk Read/Write Preamplifier (2 channels)	DP117-2 DP117-2R	National National					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Memory Drivers (Cont'd)

Function	Device	Source	Line
Hex Latch/Driver, for MOS Memories	DS1675	† National	
	DS3645	National	
	DS3675	National	
Octal Dynamic Memory Driver, Three-State	AM2965B	AMD	5
	AM2965C	AMD	
	AM2966B	AMD	
	AM2966C	◊° AMD	
Octal MOS Driver, Three-State	DP84240	National	10
	DP84244	National	
	DS1628	† National	
	DS3628	National	
10-Bit Memory Driver			
	SN54BCT2827A	*† TI	
	SN54BCT2828A	† TI	

INTERFACE

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INTERFACE—Peripheral Drivers

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Stepper Motor Driver	UC1517	† Unitorde		Driver, High-Speed Dual Pin Driver (1.5 GHz)	16G061	GigaBit		Driver, Dual H-Bridge, Dual (for motors)	L298N	SGS-Thomson	
	UC1717	Unitorde		Driver, Injector	L9335	SGS-Thomson		Driver, Dual MOSFET, to 24 V	SN75372	TI	
Stepper Motor Driver, 10 to 45 V	UC3717	Unitorde			L9336	SGS-Thomson		Driver, Dual, to 18 V, 0.5 A	SG1644	† SiliconG	80
Stepper Motor Translator/Driver	UCN4204B	Allegro Micro		Driver, Laser Diode	IR3C01	Sharp	45		SG2644	SiliconG	
	UCN5804B	Allegro Micro	5		IR3C02A/N	Sharp			SG3644	◊ SiliconG	
Actuator/Driver	ULN2005A	TI		Driver, Low-Noise Switchmode (for three-phase brushless dc motors)	UC3623	Unitorde		Driver, Dual, 2-Input, Sink or Source 500 mA	SG1627	◊† SiliconG	
Addressable Peripheral Driver (latched, 8-output driver)	NE590	Signetics		Driver, MOSFET (dual, inverting)	IXLD426	IXYS			SG3627	◊ SiliconG	
	NE591	Signetics		Driver, MOSFET (dual, non-inverting)	IXLD427	IXYS		Driver, Dual 8-Bit, BiMOS Latched	UCN5881EP	◊ Allegro Micro	85
BiMOS Latched Driver	UCN5800A	Allegro Micro		Driver, MOSFET (dual, one inverting/one non-inverting)	IXLD428	IXYS		Driver, Triple Tri-State Power (25W)	UC3657	Unitorde	
	UCN5801A	Allegro Micro	10				50	Driver, Quad MOSFET, to 24 V	SN75374	TI	
	UCN5810A	Allegro Micro		Driver, MOSFET (opto-isolated, 1μA short-circuit current)	DIG12-08-010	Dionics		Driver, Quad, Sink 2.5 A	SG3645	SiliconG	
	UCN5812A	Allegro Micro		Driver, MOSFET (opto-isolated, 10μA short circuit current)	DIG12-06-100	Dionics		Driver, 1 Channel (lamp relay driver)	TDE3207	SGS-Thomson	
	UCN5818A	Allegro Micro		Driver, MOSFET (opto-isolated, 15μA short-circuit current)	DIG11-06-150	Dionics		Driver, 2 Channel (hammer), to 35 V, 1 A	SG3700	SiliconG	90
	UCS4810H	† Allegro Micro		Driver, MOSFET (opto-isolated, 2.5μA short-circuit current)	DIG12-06-025	Dionics		Driver, 3-Channel Latched (80V, 1.7A sink)	UCN5929B	Allegro Micro	
Buffer Driver, Septuple (with open collector)	M751271	Mitsubishi	15	Driver, MOSFET (opto-isolated, 25μA short-circuit current)	DIG12-06-250	Dionics		Driver, 4 Channel Latched, 50V Sink	UCS5800H	† Allegro Micro	
CCD Driver	TSC430	TeledyneC			DIH124	Dionics	55	Driver, 4 Channel, Push Pull	L293B	SGS-Thomson	
CCD-MOSFET Driver, Complementary Outputs (10 MHz)	TSC430C	TeledyneC		Driver, MOSFET (opto-isolated, 4.5μA short-circuit current)	DIG12-08-045	Dionics		Driver, 5 Channel, CMOS/TTL Input (lamp, relay driver, load to negative supply)	UDN2957A	Allegro Micro	
	TSC430M	† TeledyneC		Driver, MOSFET (opto-isolated, 5μA short-circuit current)	DIG11-08-050	Dionics		Driver, 5 Channel Darlington, to 400 mA	XR2200	◊ Exar	95
Clock Generator/Oscillator, to 10 MHz, 8 and 1 Divider, for Microprocessors	ICM7209	† Harris		Driver, MOSFET (single inverting)	IXLD429	IXYS			XR2200M	◊† Exar	
Clock Generator to 175 MHz (For use with Brooktree RAMDACs), Divide by 2, 3, 4, 5, or 8.	BT438	Brooktree	20	Driver, Open Collector/Emitter, for 150 mA (load connected to negative supply)	PBD3520	Ericsson	60		LB1287	Sanyo	
Clock Generator, 150 MHz, for RAMDACs divide by 3, 4, 5 or 8 (for use with RAMDACs)	BT439	Brooktree							LB1288	Sanyo	
Constant-Voltage-Drive Stepper Motor Driver (120V/1.3A)	MBH90103	Fujitsu		Driver, Power Bridge	MD930	AnalogSys		Driver, 7 Channel, CMOS/PMOS Input (hammer, lamp, relay driver)	ULN2004	◊ Allegro Micro	100
Constant-Voltage-Drive Stepper Motor Driver (120V/2.5A)	MBH90101	Fujitsu		Driver, Protected High-Side (1.5A source)	UDN2901Z	Allegro Micro			ULN2014A	◊ Allegro Micro	
	MBH90102	Fujitsu		Driver, Push Pull with Diodes	L293D	SGS-Thomson			ULN2024	◊ Allegro Micro	
Constant-Voltage-Drive Stepper Motor Driver (60V/2.4A)	MBH90105	Fujitsu	25	Driver, Push-Pull Quad (600 mA per channel)	CS293D	Cherry Semi			ULN7004A	Allegro Micro	
Constant-Voltage-Drive Stepper Motor Driver (60V/4.2A)	MBH90104	Fujitsu		Driver/Receiver for Disk Head Amplifier	MB4316	Fujitsu	65		ULS2004	† Allegro Micro	
Current Driver (drives loads up to 400 mA/28V)	DH0006	National		Driver, SCR (opto-isolated)	DIG11-04-200F	Dionics			ULS2014	† Allegro Micro	
Current Driver (drives up to 400 mA/28V)	DH0006C	National		Driver, Solenoid (2.4 A)	MC3484S2	Motorola			ULS2024	† Allegro Micro	105
Darlington Switch, Quad (to 90 V, 1.5 A)	ULN7068B	Allegro Micro		Driver, Stepper Motor	L6217A	SGS-Thomson			XR2204	◊ Exar	
Data Acquisition Controller (intelligent) for A/D Converter	CY600	Cybernetic	30		PBL3717A	SGS-Thomson			MC1416	Motorola	
Deflection Circuit (CRT display use)	STK78617	Sanyo		Driver, Switcher (for dc-to-dc converters)	2473	TeledyneC	70		μA9668C	National	
Driver, Full-Bridge, DMOS (motor)	L6201	SGS-Thomson		Driver, Switching Transistor	UC2950	Unitorde			μA9668M	† National	110
	L6202	SGS-Thomson		Driver, to drive power transistors	MA500	AnalogSys			ULN2004A	◊ SGS-Thomson	
	L6203	SGS-Thomson		Driver, to 80 V, 0.2 A	DI445A	Dionics			SG2004	† SiliconG	
Driver, Full-Bridge (2 A per channel)	CS298	Cherry Semi	35	Driver, Universal High-Current Sink Driver	PBD3545	Ericsson	75		SG2014	† SiliconG	
Driver, H-Bridge, Dual	L293C	SGS-Thomson		Driver, Universal High-Current Source Driver	PBD3548	Ericsson			SG2024	† SiliconG	115
Driver, Half-Bridge, N- and P-Channel Enhancement Mode	S19950	Siliconix		Driver, Single, 125 mA, for Relays, Motors, Lamps	PBD3510	Ericsson		Driver, 7 Channel, CMOS/TTL Input (hammer, lamp, relay driver)	ULN2004A	TI	
Driver, High Side Driver Switch (drives loads from positive side of power supply)	MC3399T	Motorola			PBD3511	Ericsson			ULN2003	◊ Allegro Micro	
Driver, High Speed, 1.5 A	UC1705	† Unitorde	40						ULN2005	◊ Allegro Micro	
	UC3705	Unitorde							ULN2013A	◊ Allegro Micro	

INTERFACE

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INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Driver, 7 Channel, CMOS/TTL Input (hammer, lamp, relay driver)	ULN2003A	SGS-Thomson	5	Driver, 8 Channel, CMOS/TTL Input (lamps, relay driver)	UDN2983A	Allegro Micro	70	Full/Half Bridge Power Schottky Rectifier	2478	TeledyneC	120
	SG2003	SiiconG			UDN2985A	Allegro Micro		Full-Bridge Power Driver, Dual	L298D	Unitrode	
	SG2005	SiiconG			UDS2981	Allegro Micro		Half-Bridge Driver	SG1635A	SiiconG	
	SG2013	SiiconG			UDS2983	Allegro Micro			SG1650	SiiconG	
	SG2015	SiiconG		Driver, 8 Channel Latched, 50V Sink	UCS5801H	Allegro Micro	75		SG3635A	SiiconG	125
	SG2023	SiiconG						Half-Bridge Driver Chip (part of chipset)	IXBD4410	IXYS	
	SG2025	SiiconG		Driver, 8 Channel, MOS/TTL Input (hammer, lamp, relay driver)	ULN2801	Allegro Micro			IXBD4411	IXYS	
	ULN2003A	TI			ULN2811A	Allegro Micro			IXBD4412	IXYS	
Driver, 7 Channel, MOS/TTL Input (hammer, lamp, relay driver)	ULN2001	Allegro Micro	10		ULN2821	Allegro Micro	80	Half-Bridge Driver (direct input protocol, 500V)	GS600	Harris	130
	ULN2011A	Allegro Micro			ULS2801	Allegro Micro		Half-Bridge Driver (indirect input protocol, 500V)	GS601	Harris	
	ULN2021	Allegro Micro			ULS2811	Allegro Micro		Half-Bridge Motor Control Module	GS105	Harris	
	ULS2001	Allegro Micro			ULS2821	Allegro Micro		Hall Effect Device (senses magnetic field)	UGN3503U	Allegro Micro	
	ULS2011	Allegro Micro			ULN2801	Motorola	90	Hall Effect Device (senses magnetic field)	UGS3503U	Allegro Micro	135
	ULS2021	Allegro Micro			ULN2801A	SGS-Thomson		Hall Effect Switch (senses magnetic field)	UGN3035U	Allegro Micro	
	XR2201	Exar		Driver, 8 Channel, PMOS Input (hammer, lamp, relay driver)	ULN2802	Allegro Micro			UGN3131U	Allegro Micro	
	XR2201M	Exar	15		ULN2812A	Allegro Micro	85		UGS3131U	Allegro Micro	
	MC1411	Motorola			ULN2822	Allegro Micro		Hard Disk Three-Phase Motor Speed Control	SSI32M590	SiliconSys	(3686)
	μA9665C	National			ULS2802	Allegro Micro			SSI32M594	SiliconSys	
	ULN2001A	SGS-Thomson			ULS2812	Allegro Micro			SSI32M595	SiliconSys	
	SG2001	SiiconG			ULS2822	Allegro Micro	95	High Current Switch Driver (to drive high power, high speed NPN switching transistors)	SG1629	SiiconG	140
	SG2011	SiiconG			ULN2802	Motorola			SG3629	SiiconG	
	SG2021	SiiconG			ULN2802A	SGS-Thomson		High Side Driver, Dual 0.5A	TLE4215	Siemens	
	ULN2001A	TI		Driver, 8 Channel, CMOS/PMOS Input (hammer, lamp, relay driver)	ULN2804	Allegro Micro	100	High Side Pre-driver, Dual (for MOSFETs)	MIC5012	Micrel	(3574)
Driver, 7 Channel, PMOS Input (hammer, lamp, relay driver)	ULN2002	Allegro Micro	20		ULN2814A	Allegro Micro		High Side Pre-driver, Dual with Current Limiting (for power MOSFETs)	MIC5013	Micrel	
	ULN2012A	Allegro Micro			ULN2824	Allegro Micro		High Voltage Driver, Serial Input/Parallel Output (BiCMOS)	LZ1440	Sharp	145
	ULN2022	Allegro Micro			ULS2804	Allegro Micro		High Voltage, High Current Driver (3A max. at 45V)	DH0008	National	
	ULS2002	Allegro Micro			ULS2814	Allegro Micro		High Voltage Peripheral Driver, TTL/CMOS Input, 300V/200 mA Per Channel	PWR-DRV451-4	Power Integ	
	ULS2012	Allegro Micro			ULS2824	Allegro Micro	105	High-Voltage Analog Switch Array, 2 Channels with 8 circuits each	TC9162	Toshiba	150
	ULS2022	Allegro Micro			ULN2804	Motorola			TC9163	Toshiba	
	XR2202	Exar			ULN2804A	SGS-Thomson		I/O Expander, I ² C Serial Bus	PCF8574	Signetics	
	XR2202M	Exar	25				110	Ignition Pre-Driver (regulates inductive load circuits)	CS345	Cherry Semi	155
	MC1412	Motorola		Driver, 8 Channel, CMOS/PMOS Input (lamp, relay driver)	UDN2982A	Allegro Micro		Ignition Pre-driver (for regulating inductive load currents)	CS345A	Cherry Semi	
	μA9666C	National			UDN2984A	Allegro Micro		Inverter Driver, Septuple (with open collector)	M751270	Mitsubishi	
	μA9666M	National			UDS2982	Allegro Micro		Inverter Interface and Digital Deadtime Generator (for 3-phase PWM controls)	IXPD630	IXYS	
	SG2002	SiiconG			UDS2984	Allegro Micro	115	Lamp Dimmer, Momentary or Prolonged Touch	LS7331	LSI Comp	(3564)
	SG2012	SiiconG		Driver, 8 Channel, CMOS/TTL Input (hammer, lamp, relay driver)	ULN2803	Allegro Micro					
	SG2022	SiiconG			ULN2813A	Allegro Micro					
	ULN2002A	TI			ULN2815A	Allegro Micro					
Driver, 8 Channel, CMOS/PMOS Input (lamp, relay driver)	UDN2982A	Allegro Micro	30		ULN2823	Allegro Micro	55				60
	UDN2984A	Allegro Micro			ULN2825	Allegro Micro					
	UDS2982	Allegro Micro			ULS2803	Allegro Micro					
	UDS2984	Allegro Micro			ULS2805	Allegro Micro					
Driver, 8 Channel, CMOS/TTL Input (hammer, lamp, relay driver)	ULN2803	Allegro Micro	35		ULS2813	Allegro Micro	60				65
	ULN2805	Allegro Micro			ULS2815	Allegro Micro					
	ULN2813A	Allegro Micro			ULS2823	Allegro Micro					
	ULN2815A	Allegro Micro			ULS2825	Allegro Micro					
	ULN2823	Allegro Micro			ULN2803	Motorola	65				70
	ULN2825	Allegro Micro			ULN2803A	SGS-Thomson					
	ULS2803	Allegro Micro			ULN2805A	SGS-Thomson					
	ULS2805	Allegro Micro			NE5090	Signetics					
Driver, 8 Channel, CMOS/TTL Input (lamps, relay driver)	UDN2596A	Allegro Micro	50	Driver, 9 Channel for Printer	HA13408	Hitachi	40	Driver, 10-Bit Serial-Input Latched Source	UCN5810F	Allegro Micro	45
	UDN2597A	Allegro Micro							UCS4810H	Allegro Micro	
	UDN2981A	Allegro Micro							UCS5810H	Allegro Micro	
			55	Driver, 16-Bit, BiMOS Addressable Latched	UCN5816A	Allegro Micro		Driver, 20-Bit Serial-Input Latched Source	UCN5812F	Allegro Micro	50
				Driver, 32-Bit for Displays, Relays, Solenoids, Print Heads and Motors	S4521	Gould AMI					
				Driver, 32-Bit Serial-Input Latched Source	UCN5818F	Allegro Micro	55	Driver, 7-Channel, CMOS/TTL Input (hammer, lamp, relay driver)	ULN2003AM	TI	60
			60	EGA Logic Decoder Interface	STK192	Sanyo					
				FET Driver, High Current	UC3710	Unitrode					
				FET Driver, Dual, High SPD	UC3709	Unitrode	65				70
			65	Floppy/Hard Disk Data Controller	DP8466A	National					
				Fluorescent Display Driver (eight NPN darlings, digit or segment driver)	KA2651	Samsung					
				Full Bridge Driver, Dual (2A output per channel)	LM18298	National					
			70	Full Bridge Power Amplifier	UC3176	Unitrode	75				80
					UC3177	Unitrode					

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‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

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INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Lamp Dimmer, Ten Level Power Control	LS7315	LSI Comp (3564)		Motor, AC Motor Control Circuit	HEF4752V	Signetics	40	Motor Driver, Bipolar Stepper Motor Driver w/Chopper Control of Two-Phase Current	M54646A	Mitsubishi	
Laser Diode Driver, N-Type (40 Mbit/sec.)	M66512	Mitsubishi		Motor and Solenoid Driver	CA3169	Harris		Motor Driver, Brushless, DC	TDA5040	Signetics	
Laser Diode Driver, R-Type (20 Mbit/sec.)	M66510	Mitsubishi		Motor, Bidirectional Motor Driver	GL7445	GoldStar		Motor Driver DC-Motor	LA5527	Sanyo	
Latched Drivers, Serial Input (8-bit S/P shift register)	MIC5821	Micrel (3576)		Motor, Brushless DC Motor Commutator, 3 Phase	LS7261	LSI Comp		Motor Driver, Driver Amplifier for Servo Motor	STK6403	Sanyo	
LCD Driver, Dot Matrix (i ² C serial interface)	PCF8578	Signetics (3639)		LM621	National			Motor Driver, Fan	LB1660	Sanyo	85
	PCF8579	Signetics (3639)		Motor, Brushless DC Motor Speed Controller	LS7260	LSI Comp (3564)	45	LB1693	Sanyo		
LDC (Load/Driver/Comparator)	BT698	Brooktree (3406)		Motor, Closed-Loop Brushless Speed Control Adapter	MC33039	Motorola		Motor Driver FDD	LB1676M	◊ Sanyo	
Level Translator	HT0130P	AT&T		Motor Controller, Brushless	UC3655	Unitrode		Motor Driver for Disk Drive	LB1816	Sanyo	
Low Side Driver, Dual 0.5A	TLE4214	Siemens		Motor Controller, Brushless DC	MC33033	Motorola		Motor Driver for FDD	LB1810	◊ Sanyo	
Low Side Driver, Dual 2A	TLE4211	Siemens	10	MC33035	Motorola		50	Motor Driver, for 3-Phase brushless dc motors	HA13406W	Hitachi	90
Low Side Driver 4A	TLE4220	Siemens		NE5570	Signetics			Motor Driver, Full Bridge	UDN2953B	Allegro Micro	
Magnetic/Optical Disk Drive Read Amplifier	MB4150	Fujitsu		SA5570	Signetics			UDN2954W	Allegro Micro		
Matrix Printhead Driver, 32 + 22-Channel Dual	HV3304	◊ Supertex		SE5570	Signetics			UDS2954V	† Allegro Micro		
MICROWIRE Interface Device (for ISDN terminal adapters)	TP3464	◊ National		Motor Controller, DC Brushless (Electrical Sensor Phasing of 120/240 Degrees)	MC33034-120	Motorola		Motor Driver, Full Bridge (dual PWM)	UDN2916	Allegro Micro	
	TP3465	◊ National		MC33034-60	Motorola			UDN2993B	Allegro Micro		95
MOS Dynamic RAM Controller/Driver	DP8419	National		Motor Controller, DC Motor Speed Control	NJM2606A	NJR	55	UDN2998W	Allegro Micro		
MOS Dynamic RAM Controller Interface Circuit	DP84412	National		Motor Controller/Driver, DC Servo	MC33030	Motorola		UDS2998V	† Allegro Micro		
MOSFET Array, Eight Channel, TTL/CMOS Input, 400V/150 mA	PWR-NCH801	Power Integ		Motor Controller/Driver, Dual Channel Unipolar Stepper	PBD3517	Ericsson		Motor Driver, Half Bridge	UDN2931	◊ Allegro Micro	100
MOSFET Driver, Dynamic Discharge	DIG11-8-30DD	Dionics		Motor Controller, Embedded Servo and Spindle Controller	SSI32H4630	SiliconSys		UDN2935Z	Allegro Micro		
DIG12-8-30DD	Dionics			Motor Controller (intelligent) for 4-Phase Stepper Motors	CY500	Cybernetic		UDN2950Z	Allegro Micro		
DIG22-8-30DD	Dionics			CY512	Cybernetic		60	UDN2951	Allegro Micro		
MOSFET Driver, High Current Single	IXLD4420	IXYS		CY525	Cybernetic			UDN2955	Allegro Micro		
IXLD4429	IXYS			Motor Controller, Dual Channel Microstepping	PBM3960	Ericsson		UDS2934H	† Allegro Micro		
MOSFET Driver, Dual	TSC00C26	TeledyneC		Motor Controller, Three-Phase	UC3625	Unitrode		LAS8500	SemTech		105
MOSFET Driver, Dual High Speed (inverting)	IXLD1426	IXYS		Motor Controller, 3-Phase Brushless with Back-EMF Sensing	8901	Allegro Micro		LAS8501	SemTech		
MOSFET Driver, Dual High Speed (inverting and non-inverting)	IXLD1428	IXYS		8902	Allegro Micro		65	SG1635	† SiliconG		
MOSFET Driver, Dual High Speed (non-inverting)	IXLD1427	IXYS		8903	Allegro Micro			SG3635	SiliconG		
MOSFET Driver, Dual High-Speed	TSC1426	TeledyneC (3714)		Motor Controller, 3-Phase Brushless with Linear Current Control and Power DMOS Outputs	8925	Allegro Micro		Motor Driver PPC/FAX	LB1870M	◊ Sanyo	
TSC1427	TeledyneC (3714)			Motor Controller, 3-Phase Brushless with Power DMOS Outputs	8922	Allegro Micro		Motor Driver, Servo Amplifier (for DC/AC motor)	STK6351	Sanyo	
TSC1428	TeledyneC (3714)			Motor Drive, DC Motors	TLE4201	Siemens		Motor Driver, Stepper Motor Drive Circuit	TEA3718	SGS-Thomson	110
MOSFET Driver, Dual Photovoltaic	LH1262	◊ AT&T		Motor Driver	IR2C09	Sharp		Motor Driver, Voice Coil (controlled velocity head parking)	8958	Allegro Micro	
MOSFET Driver, Dual Power	MAX626	Maxim		Motor Driver, Bi-Directional	MB3854	Fujitsu		Motor Driver, Voice Coil (4:1 digital transconductance gain switch)	8931	Allegro Micro	
MAX627	Maxim			NJM2610	NJR			8932	Allegro Micro		
MAX628	† Maxim			IR2C10	Sharp			Motor Driver with Speed Control	LB1860	Sanyo	
TSC426	Maxim			Motor Driver, Bi-Directional with Brake Function	M54543	Mitsubishi		Motor Driver, Dual Bridge	HA13421A	Hitachi	115
TSC427	Maxim			M54544	Mitsubishi			Motor Driver, Dual Channel Microstepper	PBL3771	Ericsson	
TSC428	† Maxim			Motor Driver, Bi-Directional with Brake Function and Low Power	M54545	Mitsubishi		PBL3772	Ericsson		
Motion Controller (for dc and brushless dc motors)	LM628	National		Motor Driver, Bidirectional DC (with brake function)	STK6865H	Sanyo		PBL3773	Ericsson		
LM629	National			Motor Driver, Bidirectional DC (with brake function and overcurrent protection)	STK6884H	Sanyo		PBL3774	Ericsson		
				Motor Driver, Bidirectional (forward/reverse control)	MB3763	Fujitsu		Motor Driver, Dual (full-H)	L298	TI	120
				MB3763H	Fujitsu			Motor Driver, Quad (half-H)	L293	TI	
								L293D	TI		
								SN754410	TI		
								SN754411	TI		
								Motor Driver, Three-Phase Brushless DC Motor Controller Driver	UDS2936V	† Allegro Micro	125

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Motor Driver, Three-Phase Brushless, 13 A, 500 V CHHY004	Solitron			Motor Speed Controller, Universal ZN410D ZN410E	GEC Plessey GEC Plessey			Pin Driver, Monolithic (drives programmed voltages into difficult loads) EL2021C	Elantec		
Motor Driver, Three-Phase Brushless, 15 A, 400 V CHHY007	Solitron			Motor Speed Regulator TDA1085A TDA2085A CA3228	GEC Plessey GEC Plessey Harris		40	Pin Driver with Inhibit Mode (for ATE, semiconductor test) AD1321 AD1322	AD AD	(3352) (3352)	95
Motor Driver, Three-Phase Brushless, 15 A, 500 V CHHY003	Solitron			TDA1085A LM1014 LM1014A TDA1151	Motorola National National SGS-Thomson			Pin Driver with Inhibit Mode, 100 MHz (for digital test systems) AD345	AD		
Motor Driver, Three-Phase Brushless, 30 A, 200 V CHHY006	Solitron						45	Power Driver, 1.5 A Dual-Output TSC4426	TeledyneC	(3714)	
Motor Driver, Three-Phase Brushless, 30 A, 500 V CHHY002	Solitron		5	Motor Speed Regulator (for small dc motors). See also Linear—Consumer Circuits. MC212 SL440 LS7263	AnalogSys GEC Plessey LSI Comp (3564)			TSC4427	TeledyneC	(3714)	
Motor Driver, Three-Phase Brushless, 40 A, 100 V CHHY005	Solitron			LM1014-2 EF4443 TDA1041 TDA1154 TCA955	National SGS-Thomson SGS-Thomson SGS-Thomson Siemens		50	TSC4428	TeledyneC	(3714)	
Motor Driver, Three-Phase Brushless, 40 A, 500 V CHHY001	Solitron			SG1731 SG2731 SG3731 UC1637 UC2637 UC3637	† SiliconG SiliconG SiliconG † Unitorde † Unitorde † Unitorde		55	Power Driver, 3 A Dual-Output TSC4423	TeledyneC	(3714)	100
Motor Driver, Four-Channel Push Pull L293	Unitrode			Motor Speed Regulator, PLL TM4503	Toshiba		60	TSC4424	TeledyneC	(3714)	
Motor Driver, Five-Phase Unipolar Stepping STK6762	Sanyo			Motor, Stepper Motor Controller L297/1	SGS-Thomson			TSC4425	TeledyneC	(3714)	
Motor Driver, 2A TLE4201A1 TLE4202B	Siemens Siemens		10	Motor, Stepper Motor Driver PBL3717/2 PBL3770A HA13007A	Ericsson Ericsson Hitachi		65	Power Driver, 6 A Single-Output TSC4420	TeledyneC	(3714)	
Motor Driver, 3-Phase Brushless DC Motor Controller Drivers UDN2936W UDN2937W	Allegro Micro Allegro Micro			Motor, Stepping Motor Driver PBL3717 TDA3717 LM18293 TEA3717 TM4503 TL376C	Ericsson GEC Plessey National SGS-Thomson SGS-Thomson Ti			TSC4429	TeledyneC	(3714)	
Motor Driver, 3-Phase Brushless dc Motors UC3622	Unitrode			Motor, Stepping Motor Driver and Floppy Disk Logic Circuit CS279	Cherry Semi		70	TSC429M	† TeledyneC	(3714)	
Motor Driver, 3-Phase, 30 Vdc Brushless, 3A UC3620	Unitrode			Motor, Dual Bidirectional Motor Driver GL7438	GoldStar			Power FET Pre-Driver MIC5010 MIC5011	Micrel Micrel	(3574, 3577) (3574)	105
Motor Driver, 3A TLE4204	Siemens		15	Motor, Triple Half-Bridge (for three-phase brushless motors) UC1657	Unitrode		65	Power Level Driver, Dual, 400V/300 mA PWR-DRV3	Power Integ		
Motor Driver, 4-Phase Stepper Motor Driver (hybrid) STK6822H STK6982H	Sanyo Sanyo			Motor, Five Channel Programmable Current Switch UC3722	Unitrode			Power MOSFET Driver, Single TSC429C	TeledyneC	(3714)	
Motor Driver, 4A TLE4203	Siemens			Motor, 3-Phase Brushless Motor Driver/Speed Controller HA13440 HA13441 HA13442 HA13471 HA13472	Hitachi Hitachi Hitachi Hitachi Hitachi			TSC429M	† TeledyneC	(3714)	
Motor Driver, 3-Phase Half-Bridge for Brushless DC Motors UDN2933B UDN2934B UDS2933H	Allegro Micro Allegro Micro † Allegro Micro		20	NTDS Driver/Receiver VS610S	VTC		75	Printer Controller, for 5x7 Dot Matrix Printers CY480	Cybernetic		110
Motor, Microstepping Control of Two-Phase Stepper Motors IXMS150	IXYS			Opto-Isolated MOFSET Driver DIG11-06-030	Dionics			Printer/Scanner Interface Controller CL-CD1190	Cirrus		
Motor, PWM Dual Driver (load control and status monitoring) UC3728	Unitrode			Peripheral Driver Array (seven NPN darlington) KA2655 KA2656 KA2657 KA2658 KA2659	Samsung Samsung Samsung Samsung Samsung			Printer Solenoid Driver DS3654	National		
Motor Sensor/Driver, Single-Phase Brushless UDN3625 UDN3626	Allegro Micro Allegro Micro		25	Peripheral Driver Array (with open collector) M751272 M751273	Mitsubishi Mitsubishi			Printing Calculator Circuits DS8654	National		
Motor, Servo Controller SSI32H568 SSI32H6220	SiliconSys SiliconSys	(3686)		Peripheral Driver, Serial Output (16-bit) TSC9405C TSC9405M TSC9405M/883	TeledyneC † TeledyneC † TeledyneC		80	Pulse Width Modulator 2491	TeledyneC		
Motor, Servo Demodulator SSI32H567 SSI32H6210	SiliconSys SiliconSys	(3686)	30					Pulse Width Modulator (current mode) 2494	TeledyneC		115
Motor, Servo Motor Driver SSI32H569 SSI32H6230	SiliconSys SiliconSys	(3686) (3686)						PWM Control Circuit MB3785	Fujitsu		
Motor, Smart Power Switch (for current, power, or thermal overload) UC195 UC295 UC395	Unitrode Unitrode Unitrode		35					Relay and Lamp Driver, to 30 V, 0.3 A TDE1607	SGS-Thomson		
Motor Speed Controller MC213 ZN411	AnalogSys GEC Plessey							Relay and Lamp Driver, to 45 V, 0.3 A TDE1737	SGS-Thomson		
								Relay and Lamp Driver, to 50 V, 0.3 A TDE1787	SGS-Thomson		
								Relay and Lamp Driver, to 50 V, 0.5 A TDE1767	SGS-Thomson		120
								Relay and Lamp Driver, to 60 V, 0.3 A TDE1787A	SGS-Thomson		
								Relay and Lamp Driver, to 60 V, 0.5 A TDE1767A	SGS-Thomson		
								Relay and Lamp Driver, Dual, to 32 V, 2/4 A TDE1777	SGS-Thomson		
								Relay Driver, for 48 V Telephone Relays UDN2580A UDN2585A UDN2588A UDN2957A	Allegro Micro Allegro Micro Allegro Micro Allegro Micro		125

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Relay Driver, to 65 V, Sinks 300 mA, OR Input for 48 V Telephone Relays	DS1687 DS3686 DS3687	† National National National		Stepper Motor Driver	UC3770A UC3770B	Unitrode Unitrode		Dual Non-Inverting 3A Power Device Driver	IXLD4424	IXYS	
Relay Driver, to 70 V, 500 mA	CSR301	TeledyneC		Stepper Motor Driver (drives one phase winding of a bipolar stepper motor)	SG3718	◊ SiliconG	45	Dual NOR Driver, HN1L, 250 mA, Open Collector	394A/C	TeledyneC	80
Relay Driver, to 57 Volts, 500 mA	LM1921	National	5	Stepper Motor Driver, Half-Bridge (up to 45 V)	CS3770	Cherry Semi		Dual OR Driver, HN1L, 250 mA, Open Collector	393A/C	TeledyneC	
Relay Driver, 7 Channel, to 100 V, 500 mA	SN75468 SN75469	TI TI		Stepper Motor Transistor/Driver, 1.2 A	UDN7068	Allegro Micro		Dual Peripheral AND Driver	PBD3513 DS55451 DS55461 DS75450 DS75451 DS75461 SG55450B SG55460 SG55461 SG75450B SG75451B SG75460 SG75461 SN55451B SN55461 SN75450B SN75451B SN75461 SN75471 SN75476	Ericsson † National † National National National National ◊† SiliconG ◊† SiliconG ◊† SiliconG ◊ SiliconG ◊ SiliconG ◊ SiliconG ◊ SiliconG † TI † TI TI TI TI TI	85
Relay Driver, 7 Channel, to 50 V, 500 mA	SN75465 SN75466 SN75467	TI TI TI		Stepping Motor Driver, Four-Phase	STK6772	Sanyo		Dual Peripheral AND Driver, for CMOS	DS1631 DS3631	† National National	90
Sense FET Driver	TSC4460 TSC4461 TSC4462 TSC4463	◊† TeledyneC ◊† TeledyneC ◊† TeledyneC ◊† TeledyneC	(3714) (3714) (3714)	Stepping Motor Driver, Four-Phase (constant-current)	STK6982B	Sanyo	50	Dual Peripheral AND Driver, to 70 V, 600 mA	UDN5721M UDN5742M UDN5742M UDN5751M	Allegro Micro Allegro Micro Allegro Micro Allegro Micro	95
Serial to Parallel Converter, 64-Channel (for electrostatic printers)	HV4937	◊ Supertex		Tape Drive, Read Data Path	SSI35P550	SiliconSys	10	Dual Peripheral AND Driver, to 70 V, 700 mA	UDN5741M	Allegro Micro	105
Serial to Parallel Converter, 64-Channel (printer driver for ink-jet applications)	HV3418	◊ Supertex		Universal Power Drive, Dual, 400V/250 mA Per Channel	PWR-DRV2	Power Integ		Dual Peripheral AND Driver, to 70 V 300 mA	SN75446	TI	110
Servo Controller/Speed Control for DC Micro Motor	M51970	Mitsubishi		Universal Power Driver, 400V/300–500 mA	PWR-DRV1	Power Integ		Dual Peripheral AND Driver, to 80 V 600 mA	UDN5711M UDS3611H DS1611	Allegro Micro † Allegro Micro † National	115
Sink Driver, 1.6 A	UCN5829	Allegro Micro		Video Shift Register, 250 MHz, Quad 10-bit or Penta 8-bit	BT424	Brooktree	15	Dual Peripheral Driver	SG55470	† SiliconG	120
Sink Driver, 300 mA	UDS5711 UDS5712 UDS5713 UDS5714	Allegro Micro Allegro Micro Allegro Micro Allegro Micro		Voice Coil Motor Driver for 2.5" Disk Drive. Vs ± 5 V (Contains Park Circuit Under-Voltage Detector, Reference, Input Filter, Current Sense Amplifier)	EL2027	Elahtec		Dual Peripheral NAND Driver	DS55452 DS55462 DS75452 DS75462 SG55462 SG75462 SN55452B SN55462 SN75447 SN75452B SN75462 SN75472	† National † National National National ◊† SiliconG ◊ SiliconG † TI † TI TI TI TI ◊ TI	125
Sink Driver, 800 mA	UCN5830 UCN5831	Allegro Micro Allegro Micro		Voice Coil Motor Driver for 3.5" Disk Drive. Vs ± 12 V (Contains Park Circuit and Over-Current Protection)	EL2036	Elahtec		Dual Peripheral NAND Driver, to 70 V, 600 mA	UDN5722M UDN5752M	Allegro Micro Allegro Micro	130
Sink Driver, 100 mA	UCN5824	Allegro Micro		Voice Coil Motor Driver for 5.25" Disk Drive. Vs ± 12 V (Contains Park Circuit and Over-Current Protection)	EL2037	Elahtec		Dual Peripheral NAND Driver, to 70 V, 300 mA	MC1472 SN75477	Motorola TI	135
Solenoid Driver (dual 3 A)	UDN2974W	Allegro Micro		Winchester Disk Memory Read/Write Circuit	SSI32R104CLN	SiliconSys	20	Dual Peripheral NOR Driver	DS55454 DS55464	† National † National	
Solenoid Driver, injector	CS288	Cherry Semi		Single AC Switch, 130V@2A	GS205	Harris					
Solenoid Driver, 2.4 Amp	MC3484S2-1	Motorola		Dual AND Driver, HN1L, 250 mA, Open Collector	391A/C	TeledyneC	60				
Source Driver, Eight Channel	KA2580A KA2588A	Samsung Samsung		Dual CMOS or TTL Driver/Translator, up to 30 V	IH6201C IH6201M	Harris † Harris					
Source/Sink Driver, Half-Bridge	UDS2935 UDS2950	Allegro Micro Allegro Micro		Dual Darlington Switch, to 80 V, 1.5 A	ULN2061 ULN2062	◊ Allegro Micro ◊ Allegro Micro	25				
Source/Sink Driver, PWM Control	UDS2961 UDS2962 UDS2966	Allegro Micro Allegro Micro Allegro Micro		Dual DC Sink, 56V@2A	GS215	Harris	65				
Source/Sink Driver, PWM Full Bridge	UDS2953 UDS2954	Allegro Micro Allegro Micro		Dual DC Source, 56V@2A	GS210	Harris					
Stepper Motor Circuit, Half-Bridge, 55V/3A	LM18201	National		Dual Inverting/Non-Inverting 1.5A Power Device Driver.	IXLD4428	IXYS	30				
Stepper Motor Control Circuit, 4-Phase, Constant Voltage	MB86520 MB86521	Fujitsu Fujitsu		Dual Inverting/Noninverting 3A Power Device Driver.	IXLD4425	IXYS					
Stepper Motor Driver	MC3479 UC3517 UC3717A	Motorola Unitrode Unitrode		Dual Inverting 1.5A Power Device Driver.	IXLD4426	IXYS	70				
		(Continued)		Dual Inverting 3A Power Device Driver.	IXLD4423	IXYS					
				Dual MOSFET Driver, Inverting	TSC426C TSC426M	◊ TeledyneC † TeledyneC	35				
				Dual MOSFET Driver, Inverting/Non-Inverting	TSC428C TSC428M	◊ TeledyneC ◊† TeledyneC	(3714) (3714)				
				Dual MOSFET Driver, Non-Inverting	TSC427C TSC427M	◊ TeledyneC ◊† TeledyneC	40				
				Dual NAND Driver, HN1L, 250 mA, Open Collector	392A/C	TeledyneC					
				Dual Non-Inverting 1.5A Power Device Driver.	IXLD4427	IXYS					

INTERFACE

INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Dual Peripheral NOR Driver	(Cont'd)			Dual Power MOS Driver	D169A	Siliconix		Quad Darlington Switch, to 80 V, 1.5 A	(Cont'd)		
DS75454	National			TSC426	TeledyneC	(3714)		ULN2069B	SGS-Thomson		
DS75464	National			TSC427	TeledyneC	(3714)		ULN2070B	SGS-Thomson		
SG55464	o† SiliconG			TSC428	TeledyneC	(3714)		ULN2071B	SGS-Thomson		
SG75464	o SiliconG							ULN2075B	SGS-Thomson		
SN55454B	† TI		5	Dual Power MOSFET Driver	ICL7667C	Harris	60	ULN2076B	SGS-Thomson		
SN55464	† TI			ICL7667M	† Harris			ULN2077B	SGS-Thomson		
SN75407	TI			ICL7667	o† Maxim			SG2064	o† SiliconG		
SN75449	TI							SG2065	o† SiliconG		
SN75454B	TI			Dual Power MOSFET Driver, Inverting	MIC426	Micrel	(3574)	SG2066	o† SiliconG		
Dual Peripheral NOR Driver, for CMOS			10	Dual Power MOSFET Driver, Mixed (inverting and non-inverting)	MIC428	Micrel		SG2067	o† SiliconG		
DS1634	† National							SG2068	o† SiliconG		
DS3634	National			Dual Power MOSFET Driver, Non-Inverting	MIC427	Micrel	65	SG2069	o† SiliconG		
Dual Peripheral NOR Driver, to 70 V, 600 mA				Dual Schottky Diode Bridge (for bipolar stepper motor drivers)	CS299D	Cherry Semi		SG2070	o† SiliconG		
UDN5724M	Allegro Micro							SG2071	† SiliconG		
UDN5754M	Allegro Micro			Dual Solenoid/Motor Driver, ± 4 A	UDN2962	Allegro Micro		SG2074	o† SiliconG		
Dual Peripheral NOR Driver, to 70 V, 700 mA				Dual Switchmode Solenoid Driver	L295	SGS-Thomson		SG2075	o† SiliconG		
UDN5744M	Allegro Micro				L295	Unitrade		SG2076	o† SiliconG		
Dual Peripheral NOR Driver, to 30 V, 300 mA			15	Dual 4-Input AND Driver, HN1L 250 mA Open Collector	390A/C	TeledyneC	70	SG2077	o† SiliconG		
SN75479	TI			Dual 4-Input NAND Driver, HN1L 250 mA Open Collector	395A/C	TeledyneC		SN75065	TI		
Dual Peripheral NOR Driver, to 80 V, 600 mA				Quad Bipolar Driver	L293E	SGS-Thomson		SN75067	TI		
UDN5714M	Allegro Micro				L293D	Unitrade		SN75069	TI		
UDS3614H	† Allegro Micro			Quad Darlington Driver, to 100 V, 1.5 A	FT5753	Fujitsu		ULN2064	TI		
Dual Peripheral OR Driver				Quad Darlington Driver, to 100 V, 3 A	FT5754	Fujitsu		ULN2065	TI		
DS55453	† National			Quad Darlington Driver, to 100 V, 5 A	FT5755	Fujitsu	75	ULN2066	TI		
DS55463	† National			Quad Darlington Power Driver (to 50 V, 1.8 A)	UDN2544B	Allegro Micro		ULN2067	TI		
DS75453	National		20	Quad Darlington Switch	TE81013	SGS-Thomson		ULN2068	TI		
DS75463	National			Quad Darlington Switch, to 50 V, 1.5 A	ULN2064	o Allegro Micro		ULN2069	TI		
SG55463	o† SiliconG				ULN2065	o Allegro Micro		ULN2074	o Allegro Micro		
SG75463	o SiliconG				ULN2068	o Allegro Micro		ULN2075	o Allegro Micro		
SN55453B	o† TI				ULN2069	o Allegro Micro					
SN55463	† TI		25		ULN2074	o Allegro Micro					
SN75408	TI				ULN2075	o Allegro Micro					
SN75448	TI				ULS2064H	† Allegro Micro					
SN75453B	o TI				ULS2065H	† Allegro Micro					
SN75463	TI		30		ULS2066H	† Allegro Micro					
SN75473	TI				ULS2067H	† Allegro Micro					
Dual Peripheral OR Driver, for CMOS					ULS2068H	† Allegro Micro					
DS1633	† National				ULS2069H	† Allegro Micro					
DS3633	National				ULS2070H	† Allegro Micro					
Dual Peripheral OR Driver, to 70 V, 600 mA					ULS2071H	† Allegro Micro					
UDN5723M	Allegro Micro				ULS2074H	† Allegro Micro					
UDN5753M	Allegro Micro				ULS2075H	† Allegro Micro					
Dual Peripheral OR Driver, to 70 V, 700 mA					ULS2076H	† Allegro Micro					
UDN5743M	Allegro Micro		35		ULS2077H	† Allegro Micro					
Dual Peripheral OR Driver, to 30 V, 300 mA					ULN2047B	SGS-Thomson					
SN75478	TI				ULN2064B	SGS-Thomson					
Dual Peripheral OR Driver, to 80 V, 600 mA					ULN2065B	SGS-Thomson					
UDN3613M	Allegro Micro				ULN2066B	SGS-Thomson					
UDN5713M	Allegro Micro				ULN2067B	SGS-Thomson	105				
UDS3613H	† Allegro Micro				ULN2068B	SGS-Thomson					
Dual Peripheral Positive AND Driver					(Continued)						
SG55471	o† SiliconG		40								
SG75471	o SiliconG										
Dual Peripheral Positive NAND Driver											
SG55452B	o† SiliconG										
SG55472	o† SiliconG										
SG75452B	o SiliconG		45								
SG75472	o SiliconG										
Dual Peripheral Positive NOR Driver											
SG55454B	o† SiliconG										
SG55474	o† SiliconG										
SG75454B	o SiliconG										
SG75474	o SiliconG										
Dual Peripheral Positive OR Driver											
SG55453B	o† SiliconG		50								
SG55473	o† SiliconG										
SG75453B	o SiliconG										
SG75473	o SiliconG										
Dual Peripheral Positive-AND Drivers											
SG55451B	o† SiliconG										
Dual Peripheral/Power Driver	UDN5725M	Allegro Micro	55								

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

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INTERFACE—Peripheral Drivers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
Quad Power Peripheral Driver				Quad 2-Input OR Power Driver, Open Collector, to 100 V, Sinks 500 mA			
VQ1000	Siliconix			UHD-402	† Allegro Micro		50
VQ1001	Siliconix			UHD-403	† Allegro Micro		
VQ1004	Siliconix			UHD-502	Allegro Micro		
VQ1006	Siliconix			UHD-503	Allegro Micro		
VQ2001	Siliconix			UHP402	Allegro Micro		
VQ2004	Siliconix			UHP403	Allegro Micro		55
VQ2006	Siliconix						
VQ3001	Siliconix			Quad-Gated Inverting Power Driver			
VQ7254	Siliconix			CA3242	Harris		
Quad Solenoid Driver				Quad-Gated Inverting Power Driver (switches up to 600 mA)			
HA13415	Hitachi		10	CA3242E	Harris		
Quad Transistor Switch (Inverting) to 50 V, 1.5 A				CA3262	Harris		
L9222	SGS-Thomson			CA3262A	Harris		
				CA327A	Harris		60
Quad 1.2A (peak) Power Driver				Quad-Gated Non-Inverting Power Driver (switches up to 600 mA)	CA3252	Harris	
TSC4437	◊† TeledyneC	(3715)		Quad-Gated Power Driver, Inverting	CA3272	Harris	
TSC4438	◊† TeledyneC	(3715)		Octal Latched Peripheral Driver			
TSC4439	◊† TeledyneC	(3715)		DP7310	National		
TSC4457	◊† TeledyneC	(3715)		DP7311	National		
TSC4458	◊† TeledyneC	(3715)	15	DP8310	National		
TSC4459	◊† TeledyneC	(3715)		DP8311	National		65
TSC4465	◊† TeledyneC			Octal Serial Peripheral Driver (with output status monitor)	TPIC2801	TI	
TSC4466	◊† TeledyneC			Eight Latch/Drivers	UCN5815A	Allegro Micro	
TSC4467	◊† TeledyneC	(3714)	20	8-Bit Latch, Source Driver, Serial Input	UCN5890A	Allegro Micro	
TSC4468	◊† TeledyneC	(3714)		UCN5891A	Allegro Micro		
TSC4469	◊† TeledyneC	(3714)		UCN5895A	Allegro Micro		70
TSC4487	◊† TeledyneC	(3715)		8-Bit Latch/100 V Driver, Serial Input	UCN5843A	Allegro Micro	
TSC4488	◊† TeledyneC	(3715)		8-Bit Latch/50 V Driver, Serial Input	UCN5841A	Allegro Micro	
TSC4489	◊† TeledyneC	(3715)	25	8-Bit Latch/80 V Driver, Serial Input	UCN5842A	Allegro Micro	
Quad 2-Input AND Driver (to 70 V, sinks 600 mA)				8-Channel Source Driver with Overcurrent Protection	UDN2987A	Allegro Micro	75
UDN5706A	Allegro Micro			32-Bit Latch/Driver, Serial Input	UCN5832	Allegro Micro	
UDS5706H	† Allegro Micro			UCN5833A	Allegro Micro		
Quad 2-Input AND Power Driver, Open Collector (to 100 V, sinks 500 mA)							
UHD-400	† Allegro Micro						
UHD-406	† Allegro Micro						
UHD-500	† Allegro Micro						
UHD-506	† Allegro Micro						
UHP400	Allegro Micro						
UHP406	Allegro Micro						
Quad 2-Input NAND Driver (for 70 V, sinks 600 mA)							
UDN5707A	Allegro Micro						
UDS5707H	† Allegro Micro		35				
Quad 2-Input NAND Power Driver, Open Collector, to 100 V, Sinks 500 mA							
UHD-407	† Allegro Micro						
UHD-408	† Allegro Micro						
UHD-507	† Allegro Micro						
UHD-508	† Allegro Micro						
UHP407	Allegro Micro						
UHP408	Allegro Micro		40				
Quad 2-Input NOR Driver, to 70 V, Sinks 600 mA							
UDN5733A	Allegro Micro						
UDS5733H	† Allegro Micro						
Quad 2-Input NOR Power Driver, Open Collector, to 100 V, Sinks 500 mA							
UHD-432	† Allegro Micro						
UHD-433	† Allegro Micro						
UHD-532	† Allegro Micro						
UHD-533	† Allegro Micro		45				
Quad 2-Input OR Driver, to 70 V, Sinks 600 mA							
UDN5703A	Allegro Micro						
UDS5703H	† Allegro Micro						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Sense Amplifiers

Function	Device	Source	Line	Function	Device	Source	Line
Adaptive Sense Amplifier (for motor control)	LM1815	National		Pressure Sensor (for medical instruments: breathing monitors, spirometers, respirators, and ventilators)			
Alternator Control Circuit	AD22181	AD	(3353)	13	IC Sensors		50
Automotive Battery Monitor Circuit	AD22180	AD	(3353)	23	IC Sensors		
Gear Tooth Sensor	UGN3056	Allegro Micro		33	IC Sensors		
	UGS3056	† Allegro Micro	5	43	IC Sensors		
Gear Tooth Sensor, Hall Effect	TLE4920	Siemens		Pressure Sensor (hydraulic servo controls, pressure transmitters, refrigeration and air conditioning)	80	IC Sensors	
Hall Effect Latch	UGN3275	Allegro Micro					
	UGN3276	Allegro Micro		Pressure Sensor (medical, process control, airspeed, flow measurement, etc)	20	IC Sensors	55
	UGN3277	Allegro Micro		22	IC Sensors		
	UGS3275	† Allegro Micro	10	30	IC Sensors		
	UGS3276	† Allegro Micro		32	IC Sensors		
	UGS3277	† Allegro Micro		Pressure Sensor (medical, robotics, vacuum measurement, avionics, automotive and leak detection)	10	IC Sensors	60
Hall Effect Latch w/Power	UGN5275	Allegro Micro		12	IC Sensors		
	UGN5276	Allegro Micro		40	IC Sensors		
	UGN5277	Allegro Micro		42	IC Sensors		
Hall Effect Sensor	AD22150	AD	(3353)	Pressure Sensor (100 mV output span)	103	IC Sensors	
Hall Effect Sensor/Driver	UGQ5140K	Allegro Micro		113	IC Sensors		
Hall Effect Switch	UGN3113	Allegro Micro		Pressure Transducer (1 to 6 Vdc output span)	104	IC Sensors	65
	UGN3130	Allegro Micro		114	IC Sensors		
	UGN3201	Allegro Micro		Pressure Transmitter (4 to 20 mA output)	105	IC Sensors	
	UGN3220	Allegro Micro	20	115	IC Sensors		
	UGN3604	Allegro Micro		Sense Amplifier, Magnetic Tape	MC3467L	Motorola	
	UGN3605	Allegro Micro		Sensor Interface Amplifier (for automotive applications)	LM1964	National	
	UGS3130	† Allegro Micro		Silicon Accelerometer (automotive suspension control, braking control and industrial vibration monitoring)	3021	IC Sensors	70
Hall Effect Vane Switch	UMN6450X	Allegro Micro		Dual Core Memory Sense Amplifier, Complementary Output, Latch Capability	5520	Rochester	
Hall-Effect IC (analog output)	TLE4910	Siemens		Dual Core Memory Sense Amplifier, Separate Outputs	SG5524	† SiliconG	
Hall-Effect Switch, Brushless DC Motor Commutation	UGN3235K	Allegro Micro		Dual Sense Amplifier	55234	Rochester	
	UGS3235K	† Allegro Micro		SG55234	† SiliconG		75
Hall-Effect Switch (for alternating magnetic fields)	TLE4902	Siemens		SG55234A	† SiliconG		
Hall-Effect Switch (for unipolar magnetic fields)	TLE4903	Siemens		SG75234	SiliconG		
Hall-Effect Switch, Multiplexed	UGN3055U	Allegro Micro		Dual Sense Amplifier/Data Register	SG55236A	† SiliconG	
	UGS3055U	† Allegro Micro		Dual Sense Amplifier/Data Registers (for coincident-current core memories)	SG55236	† SiliconG	
High Pressure Sensor (hydraulic servo controls, machine tools, robotics, engine diagnostics and refrigeration)	90	IC Sensors		SG75236	SiliconG		
	93	IC Sensors		Dual Sense Amplifier (detects low-level differential input from high-speed magnetic memories)	SG5534	† SiliconG	80
HIT Pressure Sensor (medical instruments, air flow measurement, depth sensing, automotive, and vacuum measurement)	210	IC Sensors		Dual Sense Amplifier (for MOS memory or line receiver)	DS75208	National	
	310	IC Sensors		SN75207	TI		
	410	IC Sensors		DS1603	† National		
Intelligent Relay Driver, Hall Effect	TLE4303	Siemens		DS3603	National		
	TLE4304	Siemens		Quad Sense Amplifier, Three-State	MC3430	Motorola	85
Light Activated Switch	ULN3332	Allegro Micro		MC3431	Motorola		
	ULN3333	Allegro Micro		MC3432	Motorola		
	ULN3360	Allegro Micro		MC3433	Motorola		
	ULN3363	Allegro Micro		DS1651	† National		
	ULN3395	Allegro Micro		DS3651	National		90
MOS Memory Sense Amplifier	SN75107A	TI					
	SN75107B	TI					
	SN75108A	TI					
	SN75108B	TI					

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Transmitters-Receiver

Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line	Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line
	240	5	μPD71051	◊ NEC		Bus Interface Circuit (MIL-STD-1553B)	5000	5	HS3273	† Harris	
(ACIA) Asynchronous Communications Interface Adapter (Links 8-Bit bidirectional data bus to serial asynchronous data communications, including to 6860)	50	5	6850 MC6850 EF6850	Micro-C Motorola SGS-Thomson		Bus Interface—Remote Terminal (MIL-STD-1553B) Interface		5	UT1553B RTI	◊‡ UPMC	
ARINC-429 Bus Interface Circuit (CMOS)			HS3282-8	Harris	5	Bus Interface—Remote Terminal (MIL-STD-1760A) Interface		5	UT1760ARTS	◊ UPMC	
ARINC-429 Receiver/Transmitter	100	5	HS3182 HS3282 HI6010	† Harris † Harris Holt		Bus Interface—Remote Terminal with RAM (MIL-STD-1553B)		5	UT1553B RTR	◊‡ UPMC	
ARINC-429 Receiver/Transmitter with 8-Bit Microprocessor Interface and Label Recognition	100	5	HI-6010	Holt		Bus Interface—Single Transceiver (MIL-STD-1553A/B)		5	UT63M105XCVR UT63M107XCVR UT63M115XCVR UT63M117XCVR	UTMC UTMC UTMC UTMC	50
ARINC-429 Transceiver	100	5	HI-8282CM-02 HI-8282LM-02	† Holt † Holt	10	Bus Interface—Dual Transceiver (MIL-STD-1553A/B)		5	UT63M125XCVR UT63M127XCVR UT63M135XCVR UT63M137XCVR	UTMC UTMC UTMC UTMC	55
ASTRO (asynchronous/synchronous receiver/transmitter) to Interface Serial Communications Channel with a Parallel Digital System (i.e. microprocessors)	1000	12, ± 5	UC1671	Western		Combo I/O: UART, R.T.C., KBD Cont., IDE	56	5	VL82C106	◊ VLSI Tech	
Asynchronous Addressable Receiver/Transmitter	—	4.75-11.5	MM54240 MC14469	National ◊ Motorola		Command/Response Manchester II Converter (MIL-STD-1553B)	1000	5	BUS8937	† ILC-DDC	
Asynchronous Communications Element	—	5	82C50A 82C50A-Cell 82C50	◊* Harris Harris † SMC	15	Differential Bus Transceiver, Multipoint RS-485/422		5	DS75176B DS75176BT	National National	60
	—	5	WD82C50	Western		Differential Bus Transceiver, RS-485/422, Bidirectional		5	μA96176 DS16F95 DS36F95 DS3695A DS96176	National † National National * National National	65
	56	5	MD82C50A WD8250	*† Harris ◊ Western	20	DUART (Dual Universal Asynchronous Receiver and Transmitter). Two Channel UART, baud-rate generator, 16-Bit counter/timer, I/O ports.	1 MB/s	5	XR68C681 XR88C681	Exar Exar	
Asynchronous Communications Interface	1000	5	SCN2641	◊ Signetics			1000	5	2681 68681 MC2681 MC68681 SCN2681 SCN68681 26810 26814 26818	Micro-C Micro-C Motorola Motorola ◊ Signetics ◊ Signetics Signetics Signetics Signetics	70
Asynchronous Serial Manchester Adapter	1000	5	HD6408-Cell	◊ Harris		DUART (Dual Universal Asynchronous Receiver-Transmitter) (complete serial to parallel and parallel to serial interface)	56	5	VL16C452	VLSI Tech	75
Backplane Transceiver, Quad			SN55ALS057	Ti		EPIC (Enhanced Programmable Communications Interface) Serial/Parallel receiver/transmitter-Synchronous and asynchronous with baud rate generator.	1 Mb/s	5	2661 2661-1 SCN2661A SCN2661B SCN2661C COM2661 COM2661-1 COM2661-2 COM2661-3	Micro-C Micro-C ◊ Signetics ◊ Signetics ◊ Signetics SMC SMC SMC SMC	80
Baud Rate Generator	19.2	5	BRG	† SMC							
Baud Rate Generator (programmable divider)	19.2	12, ± 5	HD4702 HD4702/883 MC14411	◊ Harris † Harris Motorola	25						
	1000	5	COM8046 COM8046T COM8126 COM8126T COM8146 COM8146T	SMC SMC SMC SMC SMC SMC	30						
Baud Rate Generator (programmable divider), Dual	307/19.2	5	WD1943-00 WD1943-05	Western Western	35						
	614/19.2	5	WD1943-06	Western							
	1000	5	COM8116 COM8116T COM8136 COM8136T WD1945	SMC SMC SMC SMC Western	40						
	12.5		COM5016T	SMC							
Bus Interface—Bus Controller, Remote Terminal and Monitor (MIL-STD-1553B) Interface		5	UT1553B BCRT UT1553B BCRTM	◊‡ UPMC ◊‡ UPMC	45						
Bus Interface—Bus Controller, Remote Terminal-Multiprotocol (MIL-STD-1553A/B)		5	UT1553 BCRTMP	UTMC							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE—Transmitters-Receiver (Cont'd)

Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line	Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line
EPCI (Enhanced Programmable Communications Interface) Serial/Parallel Receiver/Transmitter, Synchronous and Asynchronous 1 Mb/s	5		26C61	† SMC		MIL-STD-1553B Dual Redundant Remote Terminal Unit (hybrid)			CT2512	GEC Plessey	
Facsimile/X.25 Link Controller 1000	5		WD2511F WD2511G	Western Western		MPCC (multi-protocol communications controller) Bit and Byte Oriented 1.25 Mb/s	5		7201 μPD7201A	Micro-C NEC	45
HPPI (High Performance Parallel Interface) Destination Interface Circuit 800 Mb/s	5		S2021	AMCC		2 Mb/s	5		68652-2 SCN68652	Micro-C Signetics	
HPPI (High Performance Parallel Interface) Source Interface Circuit 800 Mb/s	5		S2020	AMCC	5	Parallel to Serial Interface — 38.4	5 V 5		CY232 CY233	Cybernetic Cybernetic	
IBM 3274/3276 Compatible COAX Receiver/Transmitter 2358	5		COM9064	SMC		Parallel to Serial Transmitter, 5/8			MIC2259	Micrel	50
Manchester Encoder-Decoder 1000	5		HD6408 HD6409 HD6409/883 HS15530RH	◊ Harris ◊ Harris ◊† Harris † Harris		Party Line Bus for Industrial and Data Communications			MC26S10	Motorola	
1250	5		CT15530 HD15530-9 HD15531-9	GEC Plessey ◊ Harris ◊ Harris	10	PCI (Programmable Communications Interface) Serial/parallel receiver/transmitter—synchronous and asynchronous with baud rate generator. 1000 b/s	5		2651 SCN2651C COM2651	Micro-C Signetics SMC	
Master Digital-Loop Transceiver 80 160	5 5		MC145422 MC145421	Motorola Motorola	15	PCM Line Interface Circuit, with both transmit and receive circuitry. 8.448 MB/s	5		XRT5683	Exar	
MIL-STD-1553 BC/RTU/MT/Multibus Interface Unit			BUS65508	ILC-DDC		PCM Remote Control Transmitter 0.5	5		MC14497	◊ Motorola	55
MIL-STD-1553 BC/RTU/MT/Unibus Interface Unit			BUS65505	ILC-DDC		PSART (Programmable Synchronous-Asynchronous Receiver-Transmitter) Serial to parallel and parallel to serial converter that can operate in Full Duplex Mode. 50 64	5 5		8251 μPD8251A μPD8251AF MSM82C51A	* Intel NEC NEC OKI (3600)	
MIL-STD-1553 Bus Controller/RTU/Bus Monitor			BUS65600	ILC-DDC		Receiver/Decoder (Bi-Phase) 3500	5		DP8343	National	60
MIL-STD-1553 Data Bus Transceiver 5			BUS63100 II	ILC-DDC		Receiver/Decoder (Bi-Phase, IBM 3270) —	5		DP8341	National	
MIL-STD-1553 Data Bus Dual Transceiver 5			BUS63147	ILC-DDC	20	Remote Control Decoder, decodes first 5 bits as address and last 4 as data 5.0	5		MC145027	Motorola	
MIL-STD-1553 Dumb Remote Terminal Unit (hybrid)			BUS65101 II	† ILC-DDC		Remote Control Decoder, 9-bit address 5.0	5		MC145028	◊ Motorola	
MIL-STD-1553 Dumb Remote Terminal Unit (Hybrid) 1 Mb/s	5, ± 15		BUS65102 II	† ILC-DDC		Remote Control Encoder, encodes 9 bits of information and transmits serially 5.0	5		MC145026	◊ Motorola	
MIL-STD-1553 Manchester Encoder 2 Mb/s	5		BUS1556	ILC-DDC		Remote Terminal Interface Unit (MIL-STD-1553B compliance)			UT1553B	UTMC	65
MIL-STD-1553 Manchester II Decoder 16 Mb/s	5		BUS1555	ILC-DDC		Serial to Parallel Receiver, 5/8			MIC2257 MIC2260	Micrel Micrel	
MIL-STD-1553 Remote Terminal Interface			UT1760A UT63M1	UTMC UTMC	25	Signalling System No. 7 Link Controller (Q.703) 64	5		WD2507	Western	
MIL-STD-1553 Terminal Bit Processor			BUS64100	ILC-DDC		Slave Digital-Loop Transceiver 80 160	5 5		MC145426 MC145425	Motorola Motorola	70
MIL-STD-1553 to Microprocessor Interface Unit 5			BUS66300 II	ILC-DDC		Synchronous Data Link Controller, HDLC/SDLC 4000	5		WD1935A	Western	
MIL-STD-1553 Transceiver 1 Mb/s	5, ± 15		BUS63104 II	† ILC-DDC		Synchronous Receiver/Transmitter (Bi-Sync/SDLC) 800	± 5, 12		μPD379	NEC	
MIL-STD-1553 Dual Redundant Data Bus Transceiver 1 Mb/s	± 12/ ± 15		BUS63125 II	† ILC-DDC	30	Synchronous Serial Data Adaptor 2 Mb/s	5		6852	Micro-C	
MIL-STD-1553 Dual Redundant Remote Terminal Hybrid 5			BUS65142 BUS65144	ILC-DDC ILC-DDC		Transceiver, MIL-STD-1553			CT1487 CT1589 CT2077 CT3077 CT3078 CT3231 CT3232	GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey	75
MIL-STD-1553 Dual Redundant Remote Terminal Unit			BUS65112	ILC-DDC		Transceiver, MIL-STD-1553A/B 1000	± 15 ± 12 ± 15.5		BUS63105 II BUS8553	† ILC-DDC † ILC-DDC	80
MIL-STD-1553B Bus Circuit			CT1775	GEC Plessey		Transceiver, RS-232 with Power Supply Generator —	5		LT1130C	LinearTech	
MIL-STD-1553B Bus Controller/Remote Terminal/Monitor Transceiver Circuit			MA3690 MA3691	GEC Plessey GEC Plessey	35						
MIL-STD-1553B Bus Interface Circuit			CT1800 CT1801 CT1820	GEC Plessey GEC Plessey GEC Plessey							
MIL-STD-1553B Remote Terminal 1250	5		MA805	GEC Plessey	40						
MIL-STD-1553B Subsystem Interface Support Circuit			MA8055	GEC Plessey							

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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INTERFACE--Transmitters-Receiver (Cont'd)

Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line	Function	Max Serial Data Rate in kHz	Supply Voltage, V	Device	Source	Line
Transceiver, Serial T1	5	5	CS2180A	Crystal Dallas		Dual MIL-STD-1553B Transceiver, Protocol, Subsystem			CT2525 CT2526 CT2527 CT2528 CT2529	GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey	55
Transmitter/Decoder (Bi-Phase, IBM 3270)	5		DP8340	National		Dual Redundant Remote Terminal Interface Unit, MIL-STD-1553B Data Bus			MCT83100	GEC Plessey	
Transmitter/Encoder (Bi-Phase)	3500	5	DP8342	National		Dual RS-232 Transmitter/Receiver	5		DS1228 DS232 ICL232C ICL232I ICL232M	◊ Dallas ◊ Dallas Harris Harris † Harris	60
UART & Centronics Printer Port	56	5	VL16C451B	◊ VLSI Tech	5	Dual RS-232 Transmitter/Receiver and Power Supply	5		TSC232	TeledyneC	
UART & Centronics Printer Port with FIFO	56	5	VL16C551	◊ VLSI Tech		Dual UART & Centronics Printer Port with FIFO	56	5	VL16C552	◊ VLSI Tech	
UART, MIL-STD-1553A	1000	5	COM1553B	◊ SMC		Dual UART & Printer Port	56	5	VL16C452B	◊ VLSI Tech	
UART (Universal Asynchronous Receiver-Transmitter)			TC8570P TC8570F TC8570P	Toshiba Toshiba (3735) Toshiba (3735)	10	Dual-Redundant Remote Terminal Interface Unit for MIL-STD-1553B	1000	5	MCT83000	GEC Plessey	65
UART (Universal Asynchronous Receiver-Transmitter), (complete serial to parallel and parallel to serial interface)	625	5	NS82C50	National		Triple RS-232 Transmitter/Receiver	5		DS1229	◊ Dallas	
UART (Universal Asynchronous Receiver-Transmitter), (complete serial to parallel and parallel to serial interface)	38.5 40	5 5	SCC2691 COM8017 COM8018	◊ Signetics SMC SMC		Octal Asynchronous Receiver/Transmitter	19.2	7	TCM78808	TI	
	56	5	INS8250 VL16C450 WD16C450 WD2123	National VLSI Tech Western ◊ Western	15	Octal UART	38.4	5	SCC2698B	◊ Signetics (3677)	
	60	5	TR1863-00 TR1865-00	◊ Western ◊ Western	20						
	100	5	CDP1854AC HD6406 HD6406-Cell HS82C52RH	† Harris ◊† Harris ◊ Harris ◊ Harris	25						
			MD82C52 82C52 82C52-Cell	*† Harris ◊† Harris ◊ Harris							
	150	5	TR1863-02 TR1865-02	◊ Western ◊ Western	30						
	200	5	CDP6402D CDP6402E HD6402/883	*† Harris ◊ Harris ◊ Harris	35						
			TR1863-04	*† Harris ◊ Western							
	800	5	MB8868A	Fujitsu							
	1000	5	CDP65C51-1	† Harris							
	2000	5	CDP65C51-2	† Harris							
UART with FIFO	56	5	VL16C550	◊ VLSI Tech							
UART, Eight Channel Universal	50/19.2K		COM78808	◊ SMC							
UNITS (User Network Interface Termination for Switches)	0.192	5	T7252A	AT&T							
Universal Asynchronous Receiver/Transmitter			SSI73M450	SiliconSys (3688)	40						
Universal Asynchronous Receiver/Transmitter (UART)	5 500	5 5	UART HD6402B HD6402R	† SMC ◊ Harris ◊ Harris							
Universal Data Bus Dumb Remote Terminal Unit (hybrid)			BUS65201 II	† ILC-DDC							
Universal Data Bus Transceiver (hybrid)			BUS63102 II	† ILC-DDC	45						
USYNRT (universal synchronous receiver/transmitter) Multi-Protocol, Bit and Byte Oriented	1500	5,12	COM5025	SMC							
Variable Transceiver, MIL-STD-1553A/B	1000	± 15,5	BUS8559	† ILC-DDC							
X.25 Packet Network Interface (LAPB)	1100	5, 12	WD2511A	Western							
Dual MIL-STD-1553B Transceiver			CT2520 CT2521	GEC Plessey GEC Plessey	50						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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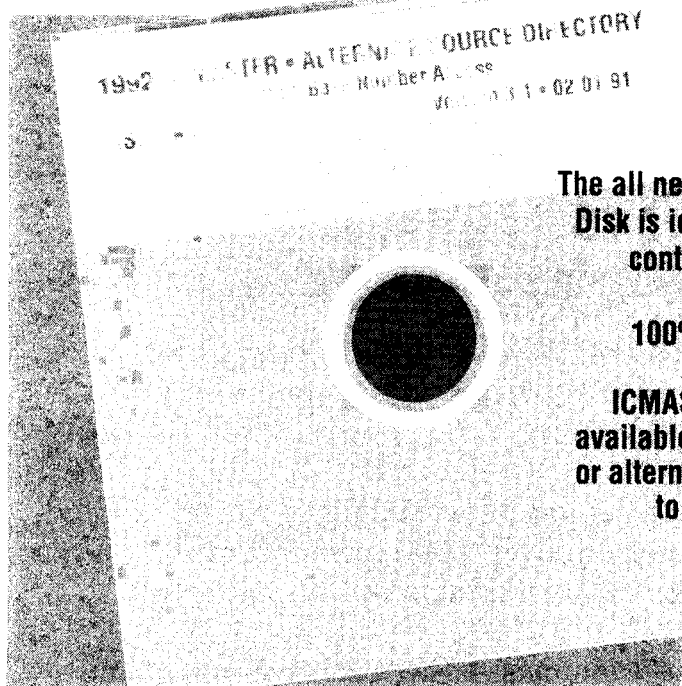
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INTRODUCTION TO LINEAR

The Linear Section includes parameters on over 1100 operational amplifiers. Since there are so many devices, separate lists are provided for those having special characteristics such as High Speed, High Voltage or Wide Bandwidth. If you have located an op amp in a specialized category, you can review its characteristics by finding it in the Part Number or Product Indexes and looking it up in the Operational Amplifier Characteristics Section.

After the special lists, the "Operational Amplifier Characteristics" listings categorize amplifiers by input parameters. They are arranged in order of increasing offset voltage, bias current, offset current and then voltage drift. The column labeled "Comp" indicates the number of external components normally used for compensation; for example "0" means no compensation is required.

Consumer circuits such as audio amplifiers, AM, FM, and TV circuits as well as some digital devices (watches, calculators, etc.) are covered by model number in the Consumer Circuit Section. Linear devices that do not fit in conventional categories are listed under the heading "Other Linear Devices".

Category

- Amplifiers, Special Purpose
- Arrays
- Transistors
- Special
- Comparators
- Consumer Circuits
- Followers
- Operational Amplifiers
- Selected Characteristics
- High Output Current
- High Speed
- High Voltage
- Low Bias Current
- Low Drift
- Low Power
- Wideband
- Complete Characteristics
- Phase Locked Loop Circuits
- Power Supply Circuits
- Voltage Regulators
- Fixed
- Adjustable
- DC-DC Converters
- Switching Regulators
- Miscellaneous
- Telecommunications
- Timers
- Other Linear Devices

LINEAR—Amplifiers, Special Purpose

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
AF Power Amplifier, Two Channels (10 W)	LA4280	Sanyo		Buffer Amplifier, FET-Input	LH4033C	National		Current Feedback Amplifier, 100 MHz	HA5004/883	† Harris			
				LH4063C	National		45	DAS (programmable gain, track and hold) Data Acquisition Amplifier (prog. gain, track and hold)	AD365	AD (3345)			
AF Power Amplifier (3.5 W)	LA4265	Sanyo		Buffer Amplifier, Industrial Process Control (1500V Isolation)	ISO102	Burr-Brown (3414)		Data Acquisition System, (programmable gain, track and hold)	AD367	AD			
AGC Amplifier, Low Distortion (adjustable attack, release time and threshold voltage)	LC403	Gennum						Differential Amplifier (Gain is Fixed, A = 10)	INA106B	Burr-Brown (3412)	90		
	LD403	† Gennum		Buffer Amplifier, Industrial Process Control (3500V Isolation)	ISO106	Burr-Brown (3414)			INA106K	Burr-Brown (3412)			
AGC Generator, for SSB Receivers	SL621C	GEC Plessey	5	Buffer Amplifier, Precision RF Closed Loop	LH4003	† National		Differential Amplifier (Instrumentation Amp. Building Block)	INA105A	Burr-Brown (3412)			
				LH4003C	National		50		INA105B	Burr-Brown (3412)			
AGC Generator (voice operated gain adjusting device)	SL620C	GEC Plessey		LH4006	† National				INA105K	Burr-Brown (3412)			
	SL6270	◊ GEC Plessey		LH4006C	National				INA105U	Burr-Brown (3412)	95		
Amplifier, Half-Bridge (3 A output)	UC3176	Unitrode		Buffer Amplifier, Unity Gain, Wideband	LH4001	National		Differential Amplifier, Unity Gain	AMP03	AD (3345)			
Amplifier, Loudspeaker	TEA7031	SGS-Thomson		Buffer Amplifier, Wide Bandwidth	HOS200A	AD			INA117	Burr-Brown (3412)			
				HOS200S	† AD		55	Differential/Cascode Amplifier (dc to rf)	CA3028A	† Harris			
Amplifier, Microphone	SL792	GEC Plessey	10	Buffer Amplifier, Wideband	LH4002	† National			CA3028B	† Harris			
	SL793	GEC Plessey		LH4002C	National				CA3053	† Harris	100		
Amplifier, Microphone (for telephone circuits)	ZN470AE	GEC Plessey		Buffer Amplifier, Wideband FET-Input	LH4004	† National		Differential/Video Amplifier	CLC103AM	† Comlinear			
	ZN472E	GEC Plessey		LH4004C	National		60	LM592	National				
	ZN475E	GEC Plessey						Differential Video Amplifier, 120 MHz Bandwidth, Adjustable Gain	μA592C	National			
	ZN476E	GEC Plessey	15	Buffer Amplifier, Wideband, High Slew Rate	HA5002-2	◊ † Harris			μA592M	† National		105	
	ZN477E	GEC Plessey		HA5002-5	◊ Harris			Fast Buffer	LH4008	National			
	ZN478E	GEC Plessey		HA5033-2	◊ † Harris				LH4008C	National			
Amplifier, Sample and Hold	VA730J	VTC		HA5033-5	◊ Harris				LH4009	National			
Amplifier, Dual Control	MB3110A	Fujitsu		Buffer Amplifier (500 MHz, slew rate 5000 V/μs)	EL2031	Elantec		Fast Open Loop Buffer	LH4011	National		110	
				EL2031C	Elantec				LH4011C	National			
Analog Multiplier, Two Quadrant	HA2546	Harris	20	Buffer Amplifier, 600 Mhz	AD9620	AD (3344)	65	Fiber Optic Receiver Amplifier	LH0082	† National			
Audio Amplifier with Three NPN Transistors	LM389	National		Buffer Amplifier, 730 MHz (800 v/μs slew rate)	EL2072	Elantec			LH0082C	National			
Audio Power Amplifier, Dual (5.8W)	MB3722	Fujitsu		Class A Amplifier (with 2 dc coupled gain blocks and schottky limiting diode)	GK509	Gennum		Floppy Disk Read Amplifier System	XR3470A	◊ Exar		115	
				Class A Amplifier (with 2 independent gain blocks)	GP509	Gennum			XR3470B	◊ Exar			
Audio Power Amplifier (6W)	MB3714A	Fujitsu		Class A Amplifier with 3 independent Gain Blocks	GC509	Gennum			MC3470	◊ Motorola			
	MB3715A	Fujitsu		Class A Amplifier (with 3 independent gain blocks and schottky diodes)	LS509	Gennum			MC3470A	◊ Motorola			
Audio Power Amplifier (14W BTL)	MB3730A	Fujitsu	25	Class B Amplifier, Output Stage	GS551	Gennum			MC3470	TI			
Audio Power Amplifier (15W BTL)	MB3736	Fujitsu		Compression Amplifier	LD512	Gennum		70	Floppy Disk Read-Chain Data	TL712	◊ TI		
Audio Power Amplifier (18W BTL)	MB3731	Fujitsu		Current Amplifier (unity gain, 100 mA output)	ELH0002	◊ † Elantec			TL721	◊ TI			
				ELH0002C	◊ Elantec			75	Floppy Disk Read-Chain Data Comparator with MECL III and MECL 1000	TL721	◊ TI		
Audio Power Amplifier (20W BTL)	MB3733	Fujitsu		HA5033	† Harris				Floppy Disk Write Amplifier	XR2247	Exar		120
	MB3735	Fujitsu		LH0002	◊ † National			80	GaAs FET Amplifier (500 kHz to 1 GHz)	LH4200	National		
Audio Power Amplifier (25W BTL)	MB3737	Fujitsu		LH0002C	◊ National				GaAs FET RF Amplifier	LH4201	National		
Bipolar Logarithmic Amplifier (bw ± 10 MHz)	AH2910	OEI		CLH0002	† TeledyneC			85	Instrumentation Amplifier	AMP02	AD (3345)		
Bipolar Logarithmic Amplifier (bw ± 20 MHz)	2920	OEI		Current Amplifier (unity gain, 150 mA output)	LT1010C	LinearTech			INA102	Burr-Brown (3412)			
Bipolar Logarithmic Amplifier (bw ± 3 MHz)	2531A	OEI		LT1010M	† LinearTech				Instrumentation Amplifier (digitally controlled programmable gain)	PGA203	Burr-Brown (3413)	125	
BTL Power Amplifier, Two Channels (12 W)	LA4700	Sanyo		Current Amplifier (unity gain, 200 mA output)	3553	† Burr-Brown (3410)							
Buffer Amplifier	LM6121	† National	35		BB3553	† Maxim							
	LM6125	† National		Current Amplifier (unity gain, 500 mA output)	9911	OEI							
	LM6221	National		Current Amplifier (wideband, 100 mA output)	HOS100AH	AD							
	LM6225	National		HOS199SH	† AD								
	LM6321	National		Current Booster, 100 mA Output (for op amp)	2035	† TeledyneC							
	LM6325	National											
Buffer Amplifier, Closed-Loop (750 MHz)	AD9630	AD (3344)											
Buffer Amplifier, Fast FET	LH4010	† National	40										
	LH4010C	National											

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Amplifiers, Special Purpose (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Instrumentation Amplifier (digitally-controlled programmable gain)	PGA202	Burr-Brown		Instrumentation, Fast-Settling FET-Input		(Cont'd)		Log Amplifier, Wideband.	2930	OEI	
		(3413)			INA110K	Burr-Brown		Log/Antilog Amplifier, (antilog)		AD (3346, 3354)	90
Instrumentation Amplifier (fixed gain = 10 or 100)	LT1101AC	LinearTech			INA110S	† Burr-Brown	(3412)		SSM2100	AD (3346, 3354)	
	LT1101AM	† LinearTech							ICL8049C	Harris	
	LT1101C	LinearTech		Instrumentation, Pin Programmable Gain					2910	† OEI	
	LT1101M	† LinearTech			AD624A	AD		Log/Antilog Amplifier, (log)		Burr-Brown	
Instrumentation Amplifier (for microphone preamplifier)	INA103	Burr-Brown			AD624B	AD	(3345)		4127	(3416)	
		(3412)			AD624C	AD	(3345)		ICL8048C	Harris	
Instrumentation Amplifier (low noise, low distortion)	INA103A	Burr-Brown			AD624S	† AD	(3345)		2910	† OEI	
		(3412)		Instrumentation (unity gain)	3627	Burr-Brown			2920	OEI	
	INA103B	Burr-Brown		IR Remote Control Amplifier for TV Receivers	CA3237	Harris		Log/Antilog Amplifier, 6 Decade	757	AD	(3345)
	INA103G	Burr-Brown						Log/Log Ratio Amplifier	LOG100	Burr-Brown	
Instrumentation Amplifier, Precision	INA106VG/883B	† Burr-Brown		Isolation Amplifier	AD202	AD	(3345)			(3416)	
		(3412)			AD204	AD	(3345)	Logarithmic Amplifier (dc to 120 MHz bandwidth)	AD640	AD	(3346)
	INA120	Burr-Brown			281	AD	(3345)	Logarithmic Amplifier with Peak Detector (bw ± 20 kHz)	AH2940	OEI	
		(3412)			290A	AD	(3345)	Logarithmic Amplifier (4–30 dB stages)	TL441AM	† TI	
Instrumentation Amplifier (programmable gain)	AM551C	Datel			292A	AD	(3345)	Logarithmic Amplifier (25 MHz sideband)	AD9521	AD	(3346)
	AM551M	Datel	(3442)		MP227	Analogic		Low Noise, Low Level, Chopper Stabilized Amplifier	MP221	Analogic	
Instrumentation (commutating auto zero)	ICL7605C	Harris		Isolation Amplifier (medical uses)	284J	AD	(3345)	Low Voltage, Class A, <1.6V, peak clipping	LR505	Gennum	
	ICL7605M	† Harris			286J	AD	(3345)		LS505	Gennum	
	ICL7606C	Harris		Isolation Amplifier, Optically Coupled	ISO100AP	Burr-Brown			LT505	Gennum	
	ICL7606M	† Harris				(3414)		Low Voltage, Class A, <3V	LC505	Gennum	
Instrumentation, (different input, independent gain adjustment)	AMP01	† AD			3650HG	Burr-Brown	(3414)		LC506	Gennum	
Instrumentation, (differential input, independent gain adjustment)	AD521J	AD	(3345)		3652HG	Burr-Brown			LD505	Gennum	
	AD521K	AD	(3345)	Isolation Amplifier, Transformer Coupled	AD295	AD	(3345)		LE507	Gennum	
	AD521L	AD	(3345)		3656AG	Burr-Brown	(3413)		LV506	Gennum	
	AD521S	† AD	(3345)	Isolation Amplifier, Wide Bandwidth (2000V peak isolation)	AD203	AD	(3345)	Low Voltage, Class A, <3V, compression	LD501	Gennum	
	AD522A	AD	(3345)	Isolation Amplifier (wideband)	289	AD	(3345)		LD502	Gennum	
	AD522B	AD	(3345)						LD511	Gennum	
	AD522S	† AD	(3345)	Isolation Amplifier, Three-Port (Nonlinearity to 0.025% maximum)	AD210A	AD	(3345)	Low Voltage, Class A, 1 to 10V	LC508	Gennum	
	AD625	AD	(3345)		AD210B	AD	(3345)		LP508	Gennum	
	AMP05	† AD		Isolation Amplifier, 12-Bit	ISO212J	Burr-Brown		Low Voltage, Class B, <3V	LC549	Gennum	
	INA101	Burr-Brown	(3412)		ISO212K	Burr-Brown	(3414)		LC550	Gennum	
	INA104	Burr-Brown	(3412)						LC551	Gennum	
	INA105	Burr-Brown		Isolation Amplifier (1000 Vdc)	SCM100A	Datel			LC552	Gennum	
	MN2200	MicroNet			SCM101	Datel			LD549	Gennum	
	MN2200H	† MicroNet		Isolation Amplifier (2500V)	ISO100	Burr-Brown			LV549	Gennum	
	LH0036	† National				(3414)		Microphone Amplifier, Buffer Amplifier for Electret Microphones	ZN482Z	GEC Plessey	
	LH0036C	National		Isolation Amplifier (3400V)	ISO103	Burr-Brown	(3415)	Microphone Amplifier, Telecom Electret	PBL3747	Ericsson	
	LH0038	† National			ISO108	Burr-Brown			SL6310	◊ GEC Plessey	
	LH0038C	National			ISO113	Burr-Brown	(3415)	Microphone/Headphone Amplifier			
	LM363	National			ISO122	Burr-Brown	(3414)		SSM2015	AD	(3344)
	LM363A	† National		Isolation Amplifier (3535V)	ISO120	Burr-Brown	(3414)		SSM2016	AD	(3344)
Instrumentation, Digitally Programmable Gain	PGA100A	Burr-Brown		Isolation Amplifier (5600V)	ISO107	Burr-Brown	(3415)	Microwave, 7 dB, 1–8 GHz	TQ9111	TriQuint	
		(3413)			ISO121	Burr-Brown	(3414)	Monolithic Microwave IC Amplifier (MMIC, 0.5 to 5 GHz)	HMR10502	Harris	
	PGA100B	Burr-Brown		Isolation Amplifier (750V isolation)	52046	† Micropac		Monolithic Microwave IC Amplifier (MMIC, 1 to 5 GHz)	HMR10503	Harris	
		(3413)		Linear, AGC Amplifier	GC413	Gennum	(3495)	Monolithic Microwave IC Amplifier (MMIC, 6 to 18 GHz)	HMM11810	Harris	
	PGA102	Burr-Brown						Norton Amplifier, Dual, High-Speed, Programmable	LM359	National	
		(3413)									
	PGA200	Burr-Brown									
		(3413)									
	PGA201	Burr-Brown									
	LH0084	† National									
	LH0084C	National									
	LH0086	† National									
	LH0086C	National									
Instrumentation, Fast-Settling FET-Input	INA110A	Burr-Brown									
		(3412)									
	INA110B	Burr-Brown									
		(3412)									

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Amplifiers, Special Purpose (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Operational Amplifier/Voltage Comparator, Dual	LM2924	National		Telephone audio	MC34119	Motorola		Wideband Amplifier, Logarithmic Limiting (4 to 500 MHz)	SL1531	GEC Plessey	105
	LM392	National							SL1532	GEC Plessey	
Operational Amplifier, Dual with Dual Voltage Comparator	MC3405	Motorola		Thermocouple Amplifier with Cold Junction Compensation	AD594A	AD (3348)	45		SL531C	GEC Plessey	
	MC3505	Motorola			AD594C	AD (3348)		Wideband Amplifier/Multiplier (four-quadrant multipliers for use as a variable gain amplifier)	SL532C	GEC Plessey	
Operational Transconductance Amplifier (for video, communications and high-speed data acquisition)	OPA660A	Burr-Brown (3410)	5		AD595A	AD (3348)			SG1402	SiiconG	110
					AD595C	AD (3348)			SG2402	SiiconG	
Power Amplifier, AF (28W)	μPC1318AV	NEC		Video Amplifier, Single (drives 50ohm loads with 3db bandwidth of 80 MHz)	MAX404	Maxim			SG3402	SiiconG	
Power Amplifier, AF (45W)	μPC2500H	NEC						Wideband Amplifier (up to 1 GHz)	SL565C	GEC Plessey	
Power Amplifier, Bridge (20 W)	ULN3793W	Allegro Micro		Video Amplifier, Dual (drives 75 ohm loads with 3dB bandwidth of 70 MHz)	MAX457C	Maxim		Wideband Amplifier with Low Level Video Detection (7 to 200 MHz for log IF amplifiers)	SL1521	GEC Plessey	115
Preamplifier, for IR Remote Control	TDA2320	SGS-Thomson			MAX457M	Maxim			SL1522	GEC Plessey	
Preamplifier, for Ultrasonic Remote Control	TDA3047	Signetics		Video, Differential with AGC	MC1445	Ti	50		SL1523	GEC Plessey	
Preamplifier, Infrared (74 dB gain, 100 kHz bandwidth)	TDA4050B	Siemens	10		TL026C	Ti			SL1524	GEC Plessey	
Preamplifier, Low Noise (35 dB gain, 100 MHz bandwidth)	AH0013CA	OEI			TL027C	Ti			SL1525	GEC Plessey	
	AH0013CB	OEI			TL027M	Ti			SL521	GEC Plessey	
	AH0013MA	OEI		Video, IF and RF Amplifiers					SL523	GEC Plessey	
Preamplifier, Precision (to precede operational amplifiers)	LM121	National	15		CLC100	Comlinear		Wideband Amplifier, Dual Logarithmic (30 to 1300 MHz)	SAL8002	STC	
	LM121A	National			CLC102	Comlinear	55	Wideband Buffer	LH4012	National	120
	LM221	National			CLC104AI	Comlinear			LH4012C	National	
	LM221A	National			CLC104AM	Comlinear		Quad Current Controlled Amplifier	SSM2024	AD (3354)	
	LM321	National			CLC200AM	Comlinear		Quad Inverting Amplifiers (45 dB open loop gain)	LX509	Gennum	
	LM321A	National			CLC220AM	Comlinear		Octal Programmable Gain Amplifier (gains from 1 to 128)	AD75068	AD (3357)	
Preamplifier with Output Limiting (46 dB of adjustable gain)	GL504	Gennum	20		SL1550	GEC Plessey		Two Wire Transmitter (Sends current signal over same two lines from which it is powered.)	XTR101	Burr-Brown (3413)	125
Preamplifier, Dual Low-Noise	MB3106	Fujitsu			SL541	GEC Plessey					
Preamplifier, Quad	MB43458	Fujitsu			SL550	GEC Plessey					
	MB43468	Fujitsu			SL560	GEC Plessey					
Programmable Channel Op Amp (one of 4 input stages can be connected to single output)	HA2400	Harris	25		SL610C	GEC Plessey					
	HA2404	Harris			SL611C	GEC Plessey					
	HA2405	Harris			SL612C	GEC Plessey					
	HA2406-5	Harris			CA3011	Harris					
Programmable Curve Fitting Amplifier (six programmable gain slopes)	51934	Micropac			CA3020A	Harris					
Programmable Gain Amplifier, Digitally Controlled Amplifier Array	MX009	MX-COM	30		μA733C	National					
Programmable Gain Amplifier (digitally controlled gain)	3606	Burr-Brown (3413)			μA733M	National					
	MN2020	MicroNet			LM733	National					
	HS2020	Sipex-HSD			LM733C	National					
Programmable Gain Amplifier, 8-Channel	PGA100	Maxim			μPC1651	NEC					
Read Amplifier/Preamplifier (for magnetic tape memory systems)	MC3467	Motorola			μPC1652	NEC					
RF Amplifier, Gated	MC1545	Motorola			μPC1655	NEC					
RF Amplifier, Wideband	LH4118	National			μPC1656	NEC					
	LH4118A	National			μPC1658	NEC					
	LH4118C	National			μPC1659	NEC					
RF Amplifiers, Hybrids for Cellular Radio	MHW720A	Motorola	40		μA733	Signetics					
Signal Sources Switch, (buffer amplifiers with input switches)	TDA1029	Signetics			μA733C	Signetics					
					NE5205	Signetics					
					NE5592	Signetics					
					NE592	Signetics					
					SE592	Signetics					
					TDA4501	Signetics					
					TDA4502	Signetics					
					SG1401	SiiconG					
					SG2401	SiiconG					
					SG3401	SiiconG					
					μA733C	Ti					
					μA733M	Ti					
					NE592	Ti					
					NE592A	Ti					
					TL592	Ti					
					TL592A	Ti					
					TL592B	Ti					
					Video Line Driver						
					EL2003	Eiantec					
					EL2003H	Eiantec					
					EL2003H-8	Eiantec					
					Video, 2-Channel Multiplexed	TL040C	Ti				
					Voltage Controlled Amplifier						
					SSM2013	AD (3354)					
					SSM2014	AD (3354)					
					Wideband Amplifier, Logarithmic	SL1613	GEC Plessey				

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page opposite.

LINEAR—Arrays

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Transistor Arrays				Transistor Array, Six-Unit 700 mA with Clamp Diode	M54539	Mitsubishi	55	Quad Darlington Switch			
Darlington Pair and Two Matched NPN Transistors				Transistor Array, Seven-Unit 50 mA	M54514A	Mitsubishi		ULN2064	Allegro Micro		100
CA3018	† Harris			Transistor Array, Seven-Unit (60 mA)	IR2C32A	Sharp		ULN2065	Allegro Micro		
CA3018A	† Harris			Transistor Array, Seven-Unit (120 mA)	IR2C38	Sharp		ULN2068	Allegro Micro		
Darlington Transistor Array, Five-Unit	IR3403	Sharp		Transistor Array, Seven-Unit (150 mA)	IR2416	Sharp		ULN2074	Allegro Micro		
Darlington Transistor Array, Six-Unit (400 mA)	IR2415	Sharp		Transistor Array, Seven-Unit 150 mA Darlington	M54580	Mitsubishi	60	ULN2075	Allegro Micro		
IR2419	Sharp			Transistor Array, Seven-Unit 300 mA Darlington	M54561	Mitsubishi		ULN2068	Motorola		105
Darlington Transistor Array, Seven-Unit (400 mA)	IR2422	Sharp		Transistor Array, Seven-Unit 350 mA	M54537	Mitsubishi		ULN2074	Motorola		
Darlington Transistors				Transistor Array, Seven-Unit 350 mA and Motor Driver	M54538	Mitsubishi		L702	SGS-Thomson		
IR2403	Sharp			Transistor Array, Seven-Unit 400 mA Darlington	M54566	Mitsubishi		SG2064	† SiliconG		
IR2405	Sharp			Transistor Array, Seven-Unit 500 mA Darlington with	M54523	Mitsubishi	65	SG2065	† SiliconG		
IR2410	Sharp			Clamp Diode	M54524	Mitsubishi		SG2066	† SiliconG		110
IR2411	Sharp			Transistor Array, Seven-Unit 150 mA with Clamp Diode	M54536	Mitsubishi		SG2067	† SiliconG		
Differential Pair and Three NPN Transistors				and Stroke	M54536	Mitsubishi		SG2068	† SiliconG		
ULN2046A	Allegro Micro			Transistor Array, Eight-Unit 30 mA PNP	M54569	Mitsubishi		SG2069	† SiliconG		
ULN2086A	Allegro Micro			Transistor Array, Eight-Unit 50 mA	M54513	Mitsubishi		SG2070	† SiliconG		
SL3045	† GEC Plessey			Transistor Array, Eight-Unit 500 mA Darlington with	M54562	Mitsubishi	70	SG2074	† SiliconG		115
SL3046	GEC Plessey			Clamp Diode	M54563	Mitsubishi		SG2075	† SiliconG		
SL3145	† GEC Plessey			Transistor Array, Eight-Unit 400 mA Darlington with	M54581	Mitsubishi		SG2076	† SiliconG		
CA3045	† Harris			Clamp Diode	M54585	Mitsubishi		SG2077	† SiliconG		
CA3046	† Harris			Transistor Array, Eight-Unit 500 mA Darlington with	M54590	Mitsubishi		Quad Schottky Array			
CA3086	† Harris			Clamp Diode	M54598	Mitsubishi		UC1611	Unitrode		120
CA3146	Harris			Dual Audio Matched NPN Transistor Pair.	M54660	Mitsubishi		UC2611	Unitrode		
CA3146A	Harris			SSM2210 AD (3334, 3354)				UC3611	Unitrode		
MC3346	† Motorola			Dual Audio Matched PNP Transistor Pair.	SSM2220 AD (3334, 3354)			Two NPN and One PNP Transistor			
LM3045	† National			Dual Darlington (NPN-PNP quasi complementary)	TDA1410	AEG Corp		LM195	† Unitrode		
LM3046	National			Dual Differential Amplifiers (NPN), to 120 MHz	CA3026	Harris		LM395	Unitrode		
LM3086	National			Dual Differential Amplifiers (NPN), to 500 MHz	CA3054	Harris		Three NPN and Two PNP Transistors			
LM3146	National			Dual Transistors ($f_t > 5$ GHz)	CA3054	Motorola		CA3096	† Harris		
CA3046	† SGS-Thomson			Dual Transistors, Monolithic NPN, Logarithmic	SL2363C	GEC Plessey	75	CA3096A	† Harris		125
LM3045	† SGS-Thomson			Conformance	SL2364C	† GEC Plessey		CA3096C	† Harris		
LM3046	† SGS-Thomson			Dual Transistors, Monolithic NPN, Tightly Matched, Low	CA3049	† Harris	80	Four General Purpose NPN			
SG3045	† SiliconG			Noise	CA3102	† Harris		NJD6506	NJR		
SG3046	† SiliconG			Dual Transistors, Monolithic NPN, Tightly Matched				NJD6507	NJR		
SG3086	† SiliconG			Dual Transistors, Monolithic NPN, Tightly Matched	SL301L	GEC Plessey	85	Four High Current NPN Transistors (core driver)			
SG3821	† SiliconG			Dual Transistors, Monolithic NPN, Tightly Matched	SL360	GEC Plessey		TPQ3724	Allegro Micro		130
GaAs, Single-gate D-MESFETs, 9 single, 1 dual	16G020	GigaBit		Dual Transistors, Monolithic NPN, Tightly Matched	SL362	GEC Plessey		TPQ3725	Allegro Micro		
GaAs, Dual-gate D-MESFETs, 8 single	16G021	GigaBit		Dual Transistors, Monolithic NPN, Tightly Matched	LM194	† National	90	TPQ3725A	Allegro Micro		
NPN Quad, to 350 MHz	EN2016	† Elantec		Dual Transistors, Monolithic NPN, Tightly Matched	LM394	National	95	Four NPN Transistors	IR2C34	Sharp	
PNP Matched Pair, Dual Low-Noise	MAT03 AD (3334)			Dual Transistors, Monolithic NPN, Tightly Matched				Five High Current NPN Transistors			
PNP Quad, to 350 MHz	EP2015	† Elantec		Dual Transistors, Monolithic NPN, Tightly Matched				ULN2083A	Allegro Micro		
Thirty-Two Circuit High-Voltage MOS, Built-In Logic, 250 V	LZ1032AM	Sharp		Dual Transistors, Monolithic NPN, Tightly Matched				CA3183	† Harris		
LZ1134R	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				CA3183A	Harris		
LZ1232M	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				SG3083	† SiliconG		
Transistor Array				Dual Transistors, Monolithic NPN, Tightly Matched				SG3183	† SiliconG		
IR2C17	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				SG3183A	† SiliconG		
IR2C19	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				Five High Frequency NPN Transistors, ($f_t > 5$ GHz)			
IR2C30	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				SL3127	† GEC Plessey		135
IR2C32	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				CA3127	Harris		
IR2C33	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				CA3227	Harris		140
IR2425	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				CA3246	Harris		
IR2426	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				Five High Voltage, High Current NPN Darlington			
IR2427	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				Amplifiers, Source, for Load Connected to Negative			
IR2428	Sharp			Dual Transistors, Monolithic NPN, Tightly Matched				Supply	UDN2957A	Allegro Micro	
Transistor Array, Quad (400 mA)	IR2C26	Sharp	50	Dual Transistors, Monolithic NPN, Tightly Matched				LB1287	Sanyo		145
Transistor Array, Four-Unit 1.5 A Darlington with Clamp Diode	M54532	Mitsubishi		Dual Transistors, Monolithic NPN, Tightly Matched				LB1288	Sanyo		
Transistor Array, Four-Unit 1.5 A Darlington with Clamp Diode	M54567	Mitsubishi		Dual Transistors, Monolithic NPN, Tightly Matched				Five Low-Noise NPN Transistors	LS159	SGS-Thomson	
Transistor Array, Six-Unit 320 mA with Clamp Diode and Stroke	M54533	Mitsubishi		Dual Transistors, Monolithic NPN, Tightly Matched				Six Inverted Darlington	IR2C05	Sharp	
M54534	Mitsubishi			Dual Transistors, Monolithic NPN, Tightly Matched				IR2C06	Sharp		
				Dual Transistors, Monolithic NPN, Tightly Matched				Six NPN Darlington	LB1272	Sanyo	
				Dual Transistors, Monolithic NPN, Tightly Matched				Six NPN Transistors			
				Dual Transistors, Monolithic NPN, Tightly Matched				IR2C23	Sharp		150
				Dual Transistors, Monolithic NPN, Tightly Matched				IR2C24	Sharp		
				Dual Transistors, Monolithic NPN, Tightly Matched				Seven High Current, High Voltage Darlington Drivers			
				Dual Transistors, Monolithic NPN, Tightly Matched				DS2001	National		
				Dual Transistors, Monolithic NPN, Tightly Matched				DS2002	National		
				Dual Transistors, Monolithic NPN, Tightly Matched				DS2002M	† National		
				Dual Transistors, Monolithic NPN, Tightly Matched				DS2003	National		
				Dual Transistors, Monolithic NPN, Tightly Matched				DS2003M	† National		155

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Arrays (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Transistor Arrays (Cont'd)				Seven NPN Transistors				Diode Array, Thirty-two Circuit Anode Common High Voltage				
Seven High Current, High Voltage Darlington Drivers (Cont'd)				IR2C35 Sharp				LZ1030M Sharp				
DS2004 National				IR2C36 Sharp				Diode Array, Dual Sixteen (common cathode/ common anode)				
DS2004M † National				Eight High Current, High Voltage NPN Darlington Amplifiers, Current Source				SG6496 † SiliconG				
Seven High Current, High Voltage, NPN Darlington Amplifiers, Open Collector, to 50 V, 500 mA				UDN2981A Allegro Micro				SG6496A † SiliconG				
ULN2001 ♦ Allegro Micro				UDN2982A Allegro Micro				Diode Array, Dual Eight High-Voltage (common anode/common cathode)			140	
ULN2002 ♦ Allegro Micro				UDN2983A Allegro Micro				SG5774 † SiliconG				
ULN2003 ♦ Allegro Micro				UDN2984A Allegro Micro				SG5774A † SiliconG				
ULN2004 ♦ Allegro Micro				UDS2981 † Allegro Micro				Diode Array, Sixteen High-Voltage (common anode)			80	
ULN2005 Allegro Micro				UDS2982 † Allegro Micro				SG25770 † SiliconG				
ULN2011A Allegro Micro				UDS2983 † Allegro Micro				Diode Array, Sixteen High-Voltage (common anode/common cathode)			85	
ULN2012A Allegro Micro				UDS2984 † Allegro Micro				SG5772 † SiliconG				
ULN2013A Allegro Micro				ULN2801 ♦ Allegro Micro				SG5772A † SiliconG				
ULN2014A Allegro Micro				ULN2802 ♦ Allegro Micro				Diode Array, Sixteen High-Voltage (common cathode)			145	
ULN2015A Allegro Micro				ULN2803 ♦ Allegro Micro				SG25768 † SiliconG				
ULN2021 ♦ Allegro Micro				ULN2804 ♦ Allegro Micro				Diode Array, Eight High-Voltage (common-anode)			90	
ULN2022 ♦ Allegro Micro				ULN2805 ♦ Allegro Micro				SG5768 † SiliconG				
ULN2023 ♦ Allegro Micro				ULN2811A Allegro Micro				Diode Array (6-element)			95	
ULN2024 ♦ Allegro Micro				ULN2812A Allegro Micro				CA3039 Harris				
ULN2025 ♦ Allegro Micro				ULN2813A Allegro Micro				Diode Array (10 element)			100	
ULN7003A Allegro Micro				ULN2814A Allegro Micro				CA3141 Harris				
ULN7004A Allegro Micro				ULN2815A Allegro Micro				MOS Array (32 circuit high voltage)			150	
ULS2001 † Allegro Micro				ULN2821 ♦ Allegro Micro				LZ1032AD Sharp				
ULS2002 † Allegro Micro				ULN2822 ♦ Allegro Micro				LZ1132BD Sharp				
ULS2003 † Allegro Micro				ULN2823 ♦ Allegro Micro				MOSFET Array, 2 Channel (400 V/675 mA per Channel)			105	
ULS2004 † Allegro Micro				ULN2824 ♦ Allegro Micro				PWR-NCH201 Power Integ				
ULS2005 † Allegro Micro				ULN2825 ♦ Allegro Micro				MOSFET Array, 4 Channel (400 V/335 mA per Channel)			110	
ULS2011 † Allegro Micro				ULS2801 † Allegro Micro				PWR-NCH401 Power Integ				
ULS2012 † Allegro Micro				ULS2802 † Allegro Micro				N- and P-Channel Quad Power MOSFET Array, 20V			115	
ULS2013 † Allegro Micro				ULS2803 † Allegro Micro				VQ7254 Supertex				
ULS2014 † Allegro Micro				ULS2804 † Allegro Micro				N- and P-Channel Quad Power MOSFET Array, 40V			155	
ULS2015 † Allegro Micro				ULS2805 † Allegro Micro				TQ3001 Supertex				
ULS2021 † Allegro Micro				ULS2811 † Allegro Micro				VQ3001 Supertex				
ULS2022 † Allegro Micro				ULS2812 † Allegro Micro				N-Channel Enhancement-Mode Vertical DMOS Power FET Quad Array, 40V			160	
ULS2023 † Allegro Micro				ULS2813 † Allegro Micro				TN0604 Supertex				
ULS2024 † Allegro Micro				ULS2814 † Allegro Micro				TN0606 Supertex			165	
ULS2025 † Allegro Micro				ULS2815 † Allegro Micro				VN0104 Supertex				
XR2001C Exar				ULS2821 † Allegro Micro				VN0106 Supertex			170	
XR2002C Exar				ULS2822 † Allegro Micro				VN0109 Supertex				
XR2003C Exar				ULS2823 † Allegro Micro				VN0204 Supertex			175	
XR2004C Exar				ULS2824 † Allegro Micro				VN0206 Supertex				
XR2011C Exar				ULS2825 † Allegro Micro				VN2106 Supertex			180	
XR2012C Exar				PBD3538-11 Ericsson				VN2110 Supertex				
XR2013C Exar				L601 SGS-Thomson				VQ1000 Supertex			185	
XR2014C Exar				L602 SGS-Thomson				VQ1001 Supertex				
XR2201 ♦ Exar				L603 SGS-Thomson				VQ1004 Supertex			190	
XR2201M ♦ † Exar				L604 SGS-Thomson				P-Channel Enhancement-Mode Vertical DMOS Power FET Quad Array, 40V				
XR2202 ♦ Exar				Eight High Current, High Voltage NPN Darlington Transistors, 500 mA				TP0604 Supertex			195	
XR2202M ♦ † Exar				M2580 Mitsubishi				TP0606 Supertex				
XR2203 ♦ Exar				Eight High Voltage, Medium Current NPN Darlington Amplifiers				VP0104 Supertex			200	
XR2203M ♦ † Exar				SG2801 ♦ † SiliconG				VP0106 Supertex				
XR2204 ♦ Exar				SG2802 ♦ † SiliconG				VP0204 Supertex			205	
XR2204M ♦ † Exar				SG2803 ♦ † SiliconG				VP0206 Supertex				
MC1411 Motorola				SG2804 ♦ † SiliconG				VQ2001 Supertex			210	
MC1412 Motorola				SG2805 ♦ † SiliconG				VQ2006 Supertex				
MC1413 Motorola				SG2811 ♦ † SiliconG				Printer Driver (12 Circuit) Plus Ribbon-Shift Driver (one circuit)			215	
MC1416 Motorola				SG2812 ♦ † SiliconG				IR2402 Sharp				
μA9665C National				SG2813 ♦ † SiliconG				Schottky Diode Array, Programmable (8x10)			220	
μA9666C National				SG2814 ♦ † SiliconG				CA416 Newbridge				
μA9666M † National				SG2815 ♦ † SiliconG				Thyristor/Transistor Array (SCR, programmable unijunction transistor, PNP/NPN transistor pair, NPN transistor and zener diode)			225	
μA9667C National				SG2821 ♦ † SiliconG				CA3097 † Harris				
μA9667M † National				SG2822 ♦ † SiliconG				Dual Diode Bridge Circuit, 1A/Diode			230	
μA9668C National				SG2823 ♦ † SiliconG				SG3212 ♦ SiliconG				
μA9668M † National				SG2824 ♦ † SiliconG								
SG2001 ♦ † SiliconG				Special Arrays								
SG2002 ♦ † SiliconG				Complementary Enhancement-Mode Vertical DMOS Power FET Quad Array								
SG2003 ♦ † SiliconG				TC0604 Supertex								
Seven High Voltage NPN Darlington				VC0106 Supertex								
NJD6511 NJR				VC0206 Supertex								
NJD6512 NJR				Diode Array, GaAs, 14 single, 1 full-wave rectifier								
NJD6513 NJR				16G010 TriQuint								
NJD6514 NJR				16G011 TriQuint								
Seven NPN Darlington												
IR2C03 Sharp												
IR2C20 Sharp												

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Arrays (Cont'd)

Function	Device	Source	Line
Special Arrays (Cont'd)			
Dual High-Speed MOSFET Driver			
	SG1626	† SiliconG	
	SG2626	SiliconG	
	SG3626	SiliconG	
Dual Schottky Diode Bridge			
	L6210	SGS-Thomson	
Quad High Voltage N-Channel MOSFET Array			5
	LH1162A	AT&T	
Quad PIN Diode Driver			
	SG5792	† SiliconG	
	SG5793	† SiliconG	
Octal High Voltage N-Channel MOSFET Array			
	AN0132N	AT&T	
Octal High-Voltage P-Channel MOSFET Array			
	AN0130N	AT&T	
Seven 100 mA Diodes, Straight Through Configuration			10
	SG6100	† SiliconG	
Eight Common Anode Diode Array			
	SG5770	† SiliconG	
	SG5770A	† SiliconG	
Eight 100 mA Diodes, Straight Through Configuration			
	SG6101	† SiliconG	
8-Channel Logic to High-Voltage Level Translator, for P-Channel MOSFET Arrays			
	HT0130	Supertex	
8-Channel Power MOSFET Array, N-Channel Enhancement-Mode, 160V			15
	AN0116	Supertex	
	AN0120	Supertex	
	AN0130	Supertex	
	AN0132	Supertex	
	AN0140	Supertex	
8-Channel Power MOSFET Array, P-Channel Enhancement-Mode, 160V			20
	AP0116	Supertex	
	AP0120	Supertex	
	AP0130	Supertex	
	AP0132	Supertex	
	AP0140	Supertex	

LINEAR

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

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LINEAR—Comparators

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line
Comparators—Single										
0.025	100 pA		150				± 8 to ± 20	LMC669	National	5
0.25	1.2 μA	80 nA	30	—	20	—	5, -16	RC4805A RM4805A	Raytheon † Raytheon	
	1200 nA	80 nA	35 *	—	8000	—	5 to ± 18	CMP05C	† AD (3334)	
0.3	4 μA	.2 μA	2.7	6			7, -7	μA6685	National	
0.5	3.0 nA	1000 nA	4.2 80 μs 80 us		1		5 2.8 to 16 2.8 to 16	HCMP96900 LTC1042C LTC1042M	Signal Proc LinearTech † LinearTech	
0.5 *	15 μA *	2 μA *	2.5 *	6	—	—	7, -7	AM6685C	AMD	10
0.5	25 nA 35 nA	3 nA 3 nA	250 250	36 36	200 200	5 5	± 18 5	LT1011AC LT1011AC LT1011AM	TI LinearTech † LinearTech	
0.6	1.8 μA	150 nA	30	—	20	—	5, -16	RC4805 RM4805	Raytheon † Raytheon	
	1800 nA	150 nA	35 *	—	7000	—	5 to ± 18	CMP05B CMP05F	† AD (3334) AD (3334)	15
0.75	10 μA		6 *	± 5			5	TL714C	TI	20
0.8	50 nA 600 nA	3 nA 25 nA	270 38 180	11 11 11	200 200 200		5 to ± 18 5 to ± 18 5 to ± 18	CMP02E CMP05 CMP01E	AD (3334) † AD AD (3334)	
1	10 μA 100 nA	1 μA 10 nA	35 25 250	± 10 5 30	1500 200	5	5	AD790 MB4002 LT311A	AD (3334) Fujitsu LinearTech	
1.5	50 nA	4 nA	250	36	200	5	± 18 5	LT1011C LT1011C LT1011M	TI LinearTech † LinearTech	25
2	5 μA	500 nA	2.5 10	5 5			-5.2, 5 ± 5	AD9685 LT685C LT685M	AD (3334) LinearTech † LinearTech	30
		500 nA	10	5			± 5	VLC931	ThirdDomain	
	10 μA	1 μA	2	± 5			± 7	AD9686B AD9686T	AD † AD	
			6.5	6			-5.2, 6	AM685L AM685M	◊ AMD ◊ † AMD	35
		1 μA 1.2 μA	50 12	5 6	1500			MB4001 AM686M	Fujitsu ◊ † AMD	
	10 μA 20 μA	1 μA 3 μA	6.5 40	6 5	40 *	10	-5.2, 6 -3 to -12, 12	μA685 LM106 LM206	National ◊ † National National	
			40 *	5	1250	1	-6, 12	μA710M LM710 SFC2710	† National † National † SGS-Thomson	40
	20 μA 35 μA	3 μA 1 μA	40 4.5	± 5	1250		7 to 14	μA710m AD9696 AD9698	TI AD (3334, 3352) AD (3334, 3352)	45
	45 μA 45 μA	3 μA 3 μA	40 40	5 7	40 40000	10	-3 to -12, 12 15	LM106 LM206	Rochester TI	50
2.5	13 μA 500 nA	1.3 μA 50 nA	9.5 80	± 16 ± 5	800 100		-6 to 6.5	CMP08F PM119	AD (3334) AD	
2.8	100 nA 900 nA	15 nA 80 nA	270 180	11 11	100 200		5 to ± 18 5 to ± 18	CMP02C CMP01C	† AD (3334) † AD (3334)	
3	4 mA 5 μA	1 mA 2 μA *	1.76 20	5 5	4 3 *	2	5, -5.2 5, (-6, 5- ± 15)	HCMP96850 LM161 LM261	† Signal Proc † National National	55
	10 μA	1 μA 1.3 μA	12 10 *	6 5	3 *		-6.5 ± 7	AM686C LT1016M	◊ AMD † LinearTech	
	16 μA 25 nA 50 nA 100 nA	1.6 μA 5 nA 0.3 nA 10 nA	12 9 180 —	± 16 6 30 30	800 200 40 200 *	5 5 5	-16 to 6.5 ± 5 ± 15 5 to ± 15 5, 0 to ± 15	CMP08B MAX9686 PM111 LM111 LM111 AD111 AD211 LM111 LM211	† AD (3334) † Maxim ◊ † AD † LinearTech Rochester † AD AD † Motorola Motorola	
			165 *	30	200 *	5	5, 0 to ± 15			60
			200 *	30	200 *	5	5, 0 to ± 15			65

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Comparators (Cont'd)

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line
Comparators-Single										
(Cont'd)										
3	100 nA	10 nA	200 *	30	200 *	5	5, 0 to ± 15	LM111 LM211 LM111 LM111 LM211 LM211 SG111 SG211	‡ National National † Raytheon † SGS-Thomson SGS-Thomson † Signetics Signetics ◊† SiliconG ◊ SiliconG	5
	300 nA	150 nA	30	± 18	15		± 5 to ± 18	EL2018	† Elantec	10
3.5	10 µA 20 µA	1 µA 5 µA	14 80	5 5	3 * 33		± 7 -7 to 14	LT1016C TL510	LinearTech Rochester	
3	8 µA		2.4 2.6	5.5 5.5V	3100 3100		± 5 ± 5	HFA0003 HFA0003L	Harris Harris	
4	2 µA 12 µA 25 pA	0.5 µA 3 µA 50 pA	26 22 200	5 5 —	5 * 5 * 200		5, (-6, 5- ± 10) 5, (-6, 5- ± 10) 36 *	SE527 SE529 LF111	† Signetics † Signetics † National	15
5	5 µA	5 µA	6 8					VC7696J VC7698J	VTC VTC	
	10 µA	2 µA 5 µA	20 1.4 2.2 2.7	5 5 5 5	3 * — — —	2	(-6, 5 to ± 15) 5, -5.2 5, -5.2 5, -5.2	LM361 VC7695J AD9685 AD9687	National VTC ◊ AD ◊ AD	20
	10 nA	5 nA	1.4 1.8	5 5			-5.2, 5 -5.2, 5	MAX9685 MAX9690	† Maxim † Maxim	25
	20 µA	3 µA	14 *	5	3 *	4	± 5	LM160 LM260 LM360	† National National National	
		5 µA	1.4	3.5			± 6	VC7690J	VTC	
	20 µA 25 µA	5 µA 5 µA	25 40 * 40	± 5 5 5			± 8 14/-7 -3 to -12, 12 -3 to ± 15	NJM360 KA710C LM306 LM306 LM306	NJR Samsung National Rochester TI	30
			40 *	5	40 * 40	10 10				
					1000	1	-6, 12	µA710C LM710C	National National	35
	100 nA 150 nA 300 nA	25 nA 50 nA 150 nA	300K 1300 * 20	36 36 ± 18	200 200 * 103 dB		2 to 36 2 to 36 ± 5 to ± 18	TL331I TL331C EL2019	TI TI † Elantec	
6	2 µA 20 µA 60 µA	0.75 µA 5 µA 7.5 µA	26 22 25 *	5 5 5	5 * 5 * 5 *	2	5, (-6.5- ± 10) 5, (-6.5- ± 10) ± 4.5 to ± 6.5	NE527 NE529 µA760C µA760M	Signetics Signetics National † National	40
	75 250 nA	10 µA 100 nA	40 250	5 10	75 15		± 6 to ± 18	TL710M AD351J AD351K AD351S	TI AD AD † AD	45
7.5	100 nA	25 nA	1.2 µs 1200	± 30 30	200 100		36 36 ± 18 to ± 36	LP311 LP211 LP311	National TI TI	50
	250 nA	50 nA 50 nA 50 nA	— 200 200 *	30 ± 30 13 30	40 200 40 200 *	5 200 5	5 to ± 15 ± 18 36 5, 0 to ± 15	LM311 NJM311 LM311 AD311 CA311 LM311 LM311 LM311 LM311 LM311 SG311	LinearTech NJR Samsung AD Harris Motorola National Rochester SGS-Thomson Signetics ◊ SiliconG	55
			200	30	200	5	5, 0 to ± 15	LM311	TI	60
	250 pA	50 pA	165 *	30	200 *	5	5, 0 to ± 15	LM211	◊ TI	
10	3 µA 75 pA	150 pA	200	11 —	1 200	2	36 *	MB4205 LF311	Fujitsu National	65
50	10 µA	10 µA		± 10			-0.5 to 14	MC14578	Motorola	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Comparators (Cont'd)

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line
Comparators-Single (Cont'd)										
100	1 μ A		25	5			-7 to 14	TL712	TI	
Comparators-Dual										
0.5	0.3 nA		10000	16			2.8 to 16/ \pm 2.8 to \pm 8	LTC1040C LTC1040M	LinearTech LinearTech	
0.5 *	15 μ A *	2 μ A *	2.5	6	—	—	7, -7	AM6687C	AMD	5
	15 μ A *	2 μ A *	2.5 ns *	6	—	—	7, -7	AM6687M	AMD	
1	0.05	0.05	10					Bt681	Brooktree (3406)	
	6 μ A	200 nA	6	36	8K	3	\pm 15	EL2252C	Elantec	
	15 nA	2 nA		40	300	1	\pm 0.75 to \pm 20	LT1017C	LinearTech	
								LT1017M	LinearTech	
	75 nA	8 nA		40	300	1	\pm 0.75 to \pm 20	LT1018C	LinearTech	10
								LT1018M	LinearTech	
	500 nA	—	80 *	5	20	5	5 to \pm 15	LT319A	LinearTech	
		75 nA	80 *	5	20	2	5 to \pm 15	LT119A	LinearTech	
2			2.5	5			-5.2, 5	AD96687	AD (3334)	
		2	2.8	16			10, -8	Bt688	Brooktree (3407)	15
	-250 nA	50 nA	1300	36	200		2 to 30, 1 to \pm 18	LM239A	TI	
	0.2 nA	0.2 nA	650	12	50	45	3 to 12	ALD2301A	AdvLinear	
	10 μ A	1 μ A	8	6			-5.2, 5	AM687AM	AMD	
								μ A687A	National	
			10	6			-5.2, 5	AM687M	AMD	20
								μ A687	National	
	15 μ A	3 μ A	80	\pm 7	12500		-7 to 14	TL820M	TI	
	20 μ A	3 μ A	30 *	5	1250	1	-6, 12	LM1514	National	
			40 *	5	1250		-6, 12	MC1514	Motorola	
	100 nA	25 nA	1300 *	36	50		2 to 36	LM193A	National	25
								LM193A	SGS-Thomson	
								LM193A	Signetics	
	250 nA	50 nA		\pm 5	50			LM293A	Samsung	
			1.3 μ s	\pm 5	50		36	LM393A	Samsung	
			300	36	200		5	LM293A	TI	30
			1300 *	36	50		2 to 36	GL393A	GoldStar	
								LM393A	Motorola	
								LM293A	National	
								LM393A	National	
								LM293A	SGS-Thomson	35
								LM393A	SGS-Thomson	
			1300	36	200		\pm 1 to \pm 18	LM339A	TI	
							2 to 36	LM295A	TI	
			1300 *	36	200		2 to 36	LM393A	TI	40
2.5	500	50	80		1000		5	PM219	AD	
3	4 mA	1 mA	1.76	5	4		5, -5.2	HCMP96870	Signal Proc	
	5 μ A	1 μ A	1.8	\pm 6	350		-5.2, 5	Bt687	Brooktree (3407)	
	10 μ A	1 μ A	8	6			-5.2, 5	AM687AL	AMD	
			10	6			-5.2, 5	AM687L	AMD	
	25 nA	5 nA	9	6			-5, 5	MAX9698	Maxim	45
	100 nA	10 nA	200 *	30	200 *	5	5, 0 to \pm 15	LH2111	National	
								LH2211	National	
								LH2111	Raytheon	
	100na	200na	80	\pm 30	8		\pm 18	NJM319	NJR	
3.5	75 μ A	10 μ A	40 *	5	750	1	-6, 12	μ A711M	National	50
4	0.5 μ A	75 nA	80	—	40	2	\pm 15	LM119	National	
	500 nA	75 nA	80	5	10		36	KA219	Samsung	
			80 *	5	10	2	5 to \pm 15	LM119	LinearTech	
							5, 0 to \pm 15	LM119	National	55
								LM219	National	
								LM119	SGS-Thomson	
								LM119	Signetics	
								LM219	Signetics	
5	.025 nA	20 nA	1300	36			2 to 36	LP2901	TI	
	0.005 nA *	0.001 nA *	2500 *	36	50		-0.3 to 18	TLC193M	TI	60
								TLC3702C	TI	
								TLC3702I	TI	
								TLC3702M	TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Comparators (Cont'd)

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line
Comparators-Dual (Cont'd)										
5	0.005 nA *	0.001 nA *	2500 *	36	50		-0.3 to 18	TLC393C TLC393I	TI TI	(Cont'd)
	0.2 nA 5 μA *	0.2 nA 1 μA	650 2.7 *	12 30	50	45	3 to 12 -5.2, 5	ALD2301B SP9685 SP9687	AdvLinear GEC Plessey GEC Plessey	5
	10 μA 10 nA 25 μA 25 nA	5 μA 5 nA 5 μA 5 nA 20 nA	1.8 1.9 30 * 8000 8000	5 5 5 36 36			5, -5.2 -5.2, 5 -6, 12 ± 18 to 36 ± 18 to 36	VC7697J MAX9687 LM1414 LP239 LP339	VTC Maxim National TI TI	10
	100 μA	15 μA	40 *	5	700	1	-6, 12	μA711C SFC2711	National SGS-Thomson	
	100 nA	25 nA	1300 *	36	50		2 to 36	LM193 LM193 LM193	‡ National † SGS-Thomson † Signetics	15
	100nA 250 nA	25nA 50 nA	1.3 * 1.3 μs	± 36 ± 5	50		36	LM193 LM293 LM393	TI Samsung Samsung	
			2 μs 1300 *	36 36	50		36 2 to 36	MB47393 LM393 LM293 LM393 LM293 LM393 LM293 LM293A LM393A	Fujitsu Motorola National National SGS-Thomson SGS-Thomson Signetics Signetics Signetics	20
			1300	36	200		2 to 36	LM293 LM393	TI TI	25
			1300 *	36	200		2 to 36 ± 1 to ± 18	LM393	TI	30
5 (2 operational amplifiers, 2 comparators)	500 nA	75 nA	1300 *	36	200 *		3-36	MC3505	† Motorola	
6	40 μA	10 μA	2.4 *	30			-5.2, 5	SP9680	GEC Plessey	
7	250 nA	50 nA	1.5 μs 300 1500 *	± 5 36 36	25 100 25		36 2 to 36 2 to 36	LM2903 LM2903 LM2903 LM2903 LM2903 LM2903	Samsung TI Motorola National SGS-Thomson Signetics TI	35
7.5	20 μA	5 μA	18 25	6 6	5 * 5 *	10 10	± 5 ± 5	NE521 SE521 NE522 SE522	Signetics † Signetics Signetics † Signetics	40
8	-1 μA 1 μA	0.2 μA 0.2 μA	80 * 80 *	5 5	8 8	2 2	5 to ± 15 5, 0 to ± 15	LM319 LM319 LM319 LM319	LinearTech National SGS-Thomson Signetics	45
	250 nA 1000 nA	25 nA 200 nA	600 * 80	40 ± 5	— 8	1	4.5 to 40 36	SG3524A KA319	SGS-Thomson Samsung	
9 (2 operational amplifiers, 2 comparators)	10	500 nA	1300 *	36			3-36	MC3405	Motorola	50
10	0.05 nA	0.001 nA	200	18	270		2 to 18	TLC372C TLC372M	TI † TI	
	0.2 nA 1 pA 5 pA	0.2 nA 1 pA 1 pA	650 200	12 ± 18 18	50 200	45	3 to 12 18 5	ALD2301 NJU7102 TLC352C TLC372I	AdvLinear NJR TI TI	55
		50 nA	200	18			18, 2 to 30	TLC374I	TI	
	6 μA 40 pA 100 nA 250 nA	25 pA 25 nA 100 nA	200 * 300 *	10, -9 36 38	8K 50 —	2 1	4 to 36 4.5 to 40 1.5	EL2252 CA3290A SG3524 BA10393	Elantec Harris SGS-Thomson ROHM (3618)	60
14	500na	100na	1500	± 18	200		± 18	NJM2903	NJR	

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LINEAR—Comparators (Cont'd)

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line		
Comparators-Dual									(Cont'd)			
20	0.2 nA	0.2 nA	650	12	50	45	3 to 12	ALD2301C	AdvLinear	5		
	50 pA	30 pA	200 *	36	25	2	4 to 36	CA3290	Harris			
		100 pA	250	13	20	1	3 to 15	HI8575	Holt			
	500 nA	100 nA	1300	28	30		2 to 28	LM3302	TI			
	500na	200na	1500	± 18	200		± 18	NJM2403	NJR			
30	50 pA	100 pA	240	13	20	1	± 1.5 to ± 7.5	MC14575	Motorola			
			250	13	20	1	± 1.5 to ± 7.5	MC14575	Motorola			
	150						5, ± 15	SG2111	SiiconG			
140	40	40	15	± 5	50k		5 *	AH9915	OEI			
Comparators-Quad												
0.8	100 nA	25 nA	1300	36	50	2	2-36/± 1-± 18	CMP04B CMP04F	† AD AD	(3334) (3334)	10	
1	6 μA	250 nA	12	± 5			5	MAX900AC	Maxim	15		
								MAX900AM	Maxim			
								MAX901AC	Maxim			
								MAX901AE	Maxim			
							MAX901AM	Maxim				
								MAX900AE	Maxim			
1 *	20 nA	1 nA *	5000 *	30	10		± 18	L161B	Siliconix	20		
								L161C	Siliconix			
								L161A	Siliconix			
1	50 nA	10 nA	3500	36	50	2	2-36/± 1-± 18	CMP404A CMP404E	† AD AD	(3334) (3334)		
2 *	20 μA	1 μA *	55	5	1.2 *	10	± 5	MC3430	Motorola	25		
								MC3431	Motorola			
								MC3432	Motorola			
			65	5	1.2 *	10	± 5	MC3433	Motorola			
2	100 nA	25 nA	1300 *	36	50	2	2-36/± 1-± 18	PM139A	† AD	30		
								CA139A	† Harris			
								LM139A	† Motorola			
								LM139A	† National			
								LM139A	† SGS-Thomson			
				3500	36	50	2	2-36/± 1-± 18	CMP404B CMP404F	† AD AD	(3334) (3334)	
	250 nA	50 nA	1.3 μs	± 5	50		36	LM339A	Samsung	35		
								LM239A	Samsung			
								CA239A	† Harris			
								CA339A	† Harris			
LM239A								Motorola				
			LM339A	Motorola								
			LM239A	National	40							
			LM339A	National								
			LM239A	† SGS-Thomson								
			LM339A	† SGS-Thomson								
			LM339A	Signetics								
3	50 nA	20 nA	4000 *	36	500 *		4-36/or ± 2 to ± 18	LP165	† Raytheon	45		
	75 nA	25 nA	130 *	15	400 *		5 to ± 15	HA4900	† Harris			
4	4 μA	0.5 μA *	0.8	4	20 *		5-10.2	SCC8004	STC	50		
	10 μA	500 nA	15	± 5			5	MAX900BC	Maxim			
								MAX900BE	Maxim			
								MAX900BM	† Maxim			
								MAX901BC	Maxim			
								MAX901BE	Maxim			
								MAX901BM	† Maxim			
4 (octal unit)												
	4 μA *	0.5 μA *	0.8	4	20 *		5-10.2	SCC8008	STC			
5	0.005 nA *	0.001 nA *	2500 *	36	50		-0.3 to 18	TLC339C	TI	55		
								TLC339I	TI			
								TLC3704C	TI			
								TLC3704I	TI			
								TLC3704M	† TI			
	0.2 μA	0.2 μA	250 ns	12	50	30	2-12V	ALD4302A	† AdvLinear	60		
	2.5 nA *	0.5 nA *	8000	36	500	2	2-36/± 1.5-± 18					
								LP339	National			
	30 nA	15 nA	2000 *				16	TLC339M	† TI			
										(Continued)		

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◇ Available in Surface Mount Package

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LINEAR—Comparators (Cont'd)

Offset Voltage mV (25°C)	Bias Current (25°C)	Offset Current (25°C)	Response Time ns	Max. Differential Voltage	Gain V/V	Fan Out	Supply Voltage, V	Device	Source	Line
Comparators-Quad										
(Cont'd)										
5	100 nA	25 nA	1300 *	± 36 36	200 * 200 *	2	36 2-36/± 1, ± 18	LM139 PM139 CA139 LM139 LM139 LM139 LM139 LM139A	† TI ◊† AD ◊† Harris † Motorola ◊† National † Raytheon † SGS-Thomson ◊† Signetics † Signetics	5
	150 nA 250 nA	35 nA 50 nA	200 1.3 μs 1-4 300 1300 *	15 ± 5 36 36 15	400 * 200 200 * 200 200 *	— 1	5 to ± 15 36 5 3-15	HA4902 LM339 LM239 LM239 MM54C909 MM74C909	† Harris Samsung Samsung TI † National National	10 15
				36	200 200 *	1 2	1 to 18 2-36/± 1, ± 18	MB4204 CA239 CA339 LM239 LM339 LM239 LM339 LM339 LM239 LM339 LM239 LM239A LM339	Fujitsu ◊ Harris ◊ Harris Motorola Motorola National National Raytheon ◊ SGS-Thomson SGS-Thomson Signetics Signetics Signetics	20 25
7	250 nA	50 nA	1.3 μs 1300 *	± 5 36	25 50	2	36 2-36/± 1-± 18	LM2901 LM2901 LM2901 LM2901	Samsung Motorola National SGS-Thomson Signetics	30
	250na	50na	1300	± 18	200		± 18	NJM2901	NJR	
7.5	150 nA	50 nA	130 *	15	400 *		5 to ± 15	HA4905	◊ Harris	35
10	0.05 nA	0.001 nA	200	18	270			TLC374C TLC374M	TI † TI	
	0.2 μA 1 pA 5 pA 250 nA	0.2 μA 1 pA 1 pA 100 nA	250 200	12 ± 18 18	50 200	30	3-12V 18 5 1.5	ALD4302B NJU7104 TLC354C BA10339	◊† AdvLinear NJR TI ROHM (3618)	40
15	0.2 μA	0.2 μA	250	12	50	30	2-12V	ALD4302	◊† AdvLinear	
20	50 pA 250 nA 500 nA	100 pA 100 nA 3 nA *	250 1.3 μs 2000 *	13 ± 5 Vcc	20 2 2	1 1	3 to 15 36 2 to 28	HI8574 LM3302 MC3302 MC3302 TDF3302 MC3302	† Holt Samsung Motorola ◊ SGS-Thomson SGS-Thomson Signetics	45
		100 nA	1300 *	Vcc	2	2	5 to ± 15	LM3302	National	
30	50 pA	100 pA	250	13	20	1	± 1.5 to ± 7.5	MC14574	Motorola	50

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LINEAR—Consumer Circuits

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Audio Circuits				Audio Filter (for radio equipment)	MB87079 MB87080	Fujitsu Fujitsu		CD-ROM Decode Peripheral Port Expansion for 68000	LC8953	♦ Sanyo	
Active Element for Post Filtering (for compact disc players, digital audio)	TDA1542	Signetics		Audio Level Detection System, Linear and Logarithmic Outputs	SSM2110	AD (3347, 3354)	50	CD-ROM Error Correction with ADPCM	LC8956	♦ Sanyo	
ADPCM Data Reply LSI for CD-I Format	LC8955	♦ Sanyo		Audio Power Amp (>10W)	TDA1520	Signetics		Cellular Radio Analog Processor (DTMF generator, D/A, filter, electronic volume controller)	MB87084	Fujitsu	90
AES/EC Transceiver (implements AES/EBU interface standard)	CA16C440	Newbridge (3593)		Audio Power Amp (<5W)	TDA7056	Signetics		Cellular Radio Audio Processor (filter, electronic volume control, limiter)	MB87085	Fujitsu	
AF Power Amp (2-channel, 25W)	STK4142II	Sanyo		Audio Power Amp (two 6W amps)	TDA1517	Signetics		Compandor, Low Voltage	NE575	Signetics (3668)	
AF Power Amp (2-channel, 50W)	STK4192II	Sanyo	5	Audio Power Amp (two 7W amps)	TDA1515	Signetics		Comparator Circuit (2/1 compression, 1/2 expansion by Logarithm)	MB3120	Fujitsu	
Amplifier, Headphone	TA7688	Toshiba		Audio Power Amplifier, Dual (440 mW)	LM831	National	55	Compounder, Low Voltage (2.1-7V)	MC33110	♦ Motorola	
Amplifier, Hearing Aid	LC505 LC506 LC507 LC508 LC549 LC550 LD501 LD502 LD505 LD511 LD547 LD548 LD549 LE507 LP508 LR505 LS505 LT505 LV506 LV549	Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum Gennum	10	Audio Power Amplifier (1W)	TDA7052	Signetics		Controls, Stereo, DC Operated	LM1035 TDA1074A TDA1524A	National Signetics Signetics	95
Amplifier, Wideband with AGC	MC1490	Motorola		Audio Power Amplifier (2x11W or 22W BTL)	TDA1516 TDA1518 TDA1519 TDA1519A	Signetics Signetics Signetics Signetics	60	DAC for Volume Control	M50601 M50602	Mitsubishi Mitsubishi	
Amplifier, with AGC, for Recorders	TDA7137 TDA7137-ST	Toshiba Toshiba	15	Audio Power Amplifier (2x12W)	TDA1521 TDA1521A	Signetics Signetics		Digital Audio Companding Processor	CA16C001	Newbridge (3593)	100
AMPS/NMT Audio Filter	MX306	MX-COM	20	Audio Power Amplifier, 4.6Wx2	KA22063	Samsung		Digital Audio Interface Receiver	YM3436 YM3623B	Yamaha Yamaha	
ATIP Decoder for CD-ROM	LC89582	♦ Sanyo	25	Audio Power Amplifier (4w with DC volume control)	TDA1013 TDA1013B	Signetics Signetics	65	Digital Audio Interface Receiver (EIAJ)	LC8900	Sanyo	
Attenuator, Digital	AD7115K	AD		Audio Power Amplifier, 14W	MB3732 MB3734	Fujitsu Fujitsu		Digital Audio Interface Transmitter	YM3437 YM3613C	Yamaha Yamaha	105
Attenuator, Digital (logarithmic D/A converter)	AD7111K AD7111L AD7111T AD7111U AD7118T AD7118U	♦ AD ♦ AD ♦ AD ♦ AD ♦ AD ♦ AD	30	Audio Power Amplifier, 15W	MB3742	Fujitsu		Digital Equalizer (for digital filters)	YM3608	Yamaha	
Attenuator, Digital (with loudness compensation switch), 0 to 88.5 dB Attenuation in 1.5 dB Steps	AD7110K AD7118K AD7118L	♦ AD ♦ AD ♦ AD	35	Audio Power Amplifier, 23W	KA22101	Samsung		Digital Noise Source	MM5437	National	
Attenuator, Dual	LC7500	Sanyo	40	Audio Power Amplifier (40W hi-fi)	TDA1514 TDA1514A	Signetics Signetics	70	Digital Sound Control	TDA4390	Siemens	
Audi ± uwer Amp (<10W)	TDA2613	Signetics		Audio Power Amplifier (2x1W stereo)	TDA7053	Signetics		Digital Volume Control (330-Step, -66dB in 0.2 dB steps)	YM3614B	Yamaha	110
Audible Signal Device (generates two tone frequencies)	SAE0700	Siemens		Audio Processing Array For Cellular Telephones	MX346	MX-COM		Distortion Limiting Circuit (for car audio)	MB3113	Fujitsu	
Audio Amplifier (2 W mono)	TDA7233	SGS-Thomson	45	Audio Processor-Amplifier and Compandor Section	NE5750 SA5750	Signetics (3665) Signetics	75	Distortion Suppressor	AH201-1 MP201A	Analogic Analogic	
Audio Bandpass Filter	MX326	MX-COM		Audio Processor-Filter and Control Section	NE5751 SA5751	Signetics (3665) Signetics		Distortion Suppressor, Dual	AH201-2	Analogic	
Audio Digital Input Circuit	SA47274	Signetics (3631)		Audio/Subaudio Filter Array	MX336	MX-COM		Dolby B-Type Noise Reduction System	HA12134A HA12135A HA12136A	Hitachi Hitachi Hitachi	115
				Balanced Line Driver (for audio mix consoles)	SSM2142	AD (3345, 3354)		Dolby HX Pro System	μPC1297	NEC	
				Car Audio System Power Supply Circuit	MB3774	Fujitsu	80	Dolby Noise Reduction (dual channel B/C)	HA12088 HA12090 HA12091	Hitachi Hitachi Hitachi	120
				Car Radio 5Wx2 Amplifier	LA4485	Sanyo		Dolby Surround Passive Decoder	LV1000	Sanyo	
				Car Radio 15Wx2 Amplifier	LA4705	Sanyo		Dolby B/C Noise Reduction Processor	NJM2065A NJM2075A	NJR NJR	
				CD/CDV Digital Audio Processor	YM7402	Yamaha		Dolby-B Noise Reduction Processor	NJM2063A	NJR	
				CD Player Servo Linear Circuit	XC488A0	Yamaha		DSP (Audio-use)	LC83010	Sanyo	125
				CD Player Signal Processor and Controller	YM3805 YM3815-H	Yamaha Yamaha	85	DSP for CD Audio and CD Format Decode	LC7865	♦ Sanyo	
				CD Player Signal Processor and Controller (plus RAM)	YM7121B	Yamaha					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Audio Circuits (Cont'd)				Noise Reduction, DNR	LM832	National	40	Power Amplifier, Single, <5 Watts (Cont'd)			
Dynamic Range Processor with Dual VCAs				Noise Reduction, Dolby				TA7207	Toshiba		
SSM2120	AD	(3354)		HA12088NT	Hitachi			TA7313A	Toshiba		
SSM2122	AD	(3354)		HA12091MP	Hitachi			TA7336	Toshiba		
EDC/ECC Encoder for CD-ROM/CD-I Format				LM1131A	National			Power Amplifier, Single, 5–10 Watts			
LC89581	◊ Sanyo			LM1131B	National			TDA2006	AEG Corp		105
Electronic Graphic Equalizer, Serial Control				LM1131C	National		45	LM2002	National		
TC9170	Toshiba			LM1894	National			LM383	National		
Electronic Graphic Equalizer, Up/Down				NE645	Signetics			LM383A	National		
TC9169	Toshiba		5	Oversampling Digital Filter (2-channel, 4 times)				LM384	National		
Electronic Volume Control System				YM3404B	Yamaha			TDA2002	National		
LC7535	Sanyo			Oversampling Digital Filter (2-channel, 8 times)				TDA2002A	National		110
Encoder for CD Format Optical Disk				YM3414	Yamaha		50	μPC2002	NEC		
LC89580	◊ Sanyo			YM3433	Yamaha			LM386	Samsung		
LC89583	◊ Sanyo			YM3434	Yamaha			LA4140	Sanyo		
Equalizer Amplifier				Parametric Equalizer System				LA4440	Sanyo		
GL5529	GoldStar			LV3100	Sanyo			STK4362	Sanyo		115
Equalizer Amplifier and ALC				PLL Stereo Decoder				L149	SGS-Thomson		
KA2220	Samsung		10	TEA5581	Signetics			TBA810	SGS-Thomson		
Equalizer Amplifier (dual)				Power Amplifier (bridge/stereo configuration)				TC9A90	SGS-Thomson		
KA1222	Samsung			KA2209	Samsung			TDA1905	SGS-Thomson		120
KA2221	Samsung			Power Amplifier Driver				TDA1908	SGS-Thomson		
KA22211	Samsung			LM391	National		55	TDA1908A	SGS-Thomson		
Equalizer Amplifier with Automatic Program Select, Dual				Power Amplifier Driver (30–50 W)				TDA1910	SGS-Thomson		
MB3115	Fujitsu			μPC1270	NEC			TDA2002	SGS-Thomson		
Error Correction LSI (with SRAM, FIFO) for CD-ROM				Power Amplifier Driver (50–80 W)				TDA2003	SGS-Thomson		
Decode	LC89510	◊ Sanyo	15	μPC1298V	NEC			TDA2006	SGS-Thomson		125
EVR for Graphic Equalizer (electrical variable resistor)				Power Amplifier (gain = 10)				ULN2002A	◊ SGS-Thomson		
NJU7305	NJR			NJM387	NJR			TDA1010	Signetics		
Filter, Hearing Aid, High-pass.				Power Amplifier (gain = 20)				TDA1010A	Signetics		
LF580	Gennum			NJM386	NJR	(3594)	60	TDA1020	Signetics		
FM Front End	KA22495	Samsung		NJM386B	NJR			TDA2611	Signetics		130
KA22496	Samsung			Power Amplifier, Single, > 10 Watts				TDA2611A	Signetics		
TDA7359	SGS-Thomson		20	TDA2030	AEG Corp			TA7205A	Toshiba		
TDA7361	SGS-Thomson			MB3731	Fujitsu			TA7217A	Toshiba		
FM Melody Sound Generator				HA13116	Hitachi			TA7222A	Toshiba		135
YM64AXX	Yamaha			HA13117	Hitachi			Power Amplifier, Single (30W)			
Graphic Equalizer Amp (3 band)				HA13118	Hitachi			STK4028II	Sanyo		
KA22233	Samsung			LM1875	National			STK4028V	Sanyo		
Graphic Equalizer Amp (5 band)				LM2005	National			STK4028X	Sanyo		
KA2223	Samsung			LA4461	Sanyo		65	Power Amplifier, Single (35W)			
KA22235	Samsung			STK4392	Sanyo			STK4065	Sanyo		
Graphic Equalizer, Digitally Controlled				TDA2008	SGS-Thomson			Power Amplifier, Single (40W)			
LMC835	National		25	TDA2009	SGS-Thomson			STK4032II	Sanyo		140
Head Phone Driver, Dual				TDA2030	SGS-Thomson			Power Amplifier, Single (50W)			
NJM2066	NJR			TDA2030A	SGS-Thomson			STK4036II	Sanyo		
Level Sensor, dbx (RMS)				TDA2040	SGS-Thomson			STK4036V	Sanyo		
μPC1253HA2	NEC			TDA1512A	Signetics		75	STK4036X	Sanyo		
Logarithmic Nine-Level Detector and Driver (peak hold detector amplifier)				TDA1520A	Signetics			STK4036XI	Sanyo		
MB3766	Fujitsu			TA7237A	Toshiba			Power Amplifier, Single (70W)			
Motor Speed Controller for Direct Drive Turntables				TA7268	Toshiba			STK4040II	Sanyo		145
TC9142	Toshiba		30	Power Amplifier, Single, <5 Watts				STK4040V	Sanyo		
MTS Audio Multiplexing Decoder Circuit				U413B	AEG Corp			STK4040X	Sanyo		
CXA1124A	Sony			GL386	† GoldStar			STK4040XI	Sanyo		
Music Selector	KA2230	Samsung		CA3020	† Harris		80	Power Amplifier, Single (100W)			
Music Voicing System	SSM2045	AD		CA3094	† Harris			STK4044II	Sanyo		150
Music Voicing System with Three VCAs				MC13060	Motorola			STK4044V	Sanyo		
SSM2047	AD		35	LM2895	National			STK4044X	Sanyo		
Music, Voltage Controlled Filter, Four Stage				LM380	National			Power Amplifier, Single (120W)			
SSM2044	AD			LM386	National			STK4046X	Sanyo		85
Muting Circuit (switching noise suppressor)				LM388	National			Power Amplifier, Single (150W)			
TA7324	Toshiba			LM389	National			STK4048II	Sanyo		
TA7362	Toshiba			LM390	National			STK4048V	Sanyo		
NMT Audio Filter Array				KA2201	Samsung		90	STK4048X	Sanyo		155
MX316	MX-COM			KA2212	Samsung			Power Amplifier, Single (200W)			
				LA4138	Sanyo			STK4050V	Sanyo		
				LA4180	Sanyo			Power Amplifier, Dual, > 10 Watts			
				LA4182	Sanyo			HA13130	Hitachi		
				TBA820M	SGS-Thomson		95	Power Amplifier, Dual, <5 Watts			
				TDA1904	SGS-Thomson			ULN3750B	Allegro Micro		160
				TDA2822M	SGS-Thomson			HA13122	Hitachi		
				TDA1011	Signetics			LM1877	National		
				TDA1015	Signetics			LM1895	National		
				TA7140	Toshiba		100	LM1896	National		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Audio Circuits (Cont'd)				Preamplifier				Surround Signal Processor, Pitch Changer			
Power Amplifier, Dual, <5 Watts (Cont'd)				SSM2017 AD (3344)				YM3408 Yamaha			
LM2877 National				MA106 AnalogSys				Surround Sound Processor			
LM2896 National				MA459 AnalogSys				YM3411 Yamaha			
TEA2025 SGS-Thomson				SL561B GEC Plessey				Surround Sound Processor			
TDA7050 Signetics				SL561C GEC Plessey				YM7128 Yamaha			
TA7215 Toshiba				ZN459 † GEC Plessey				Surround Sound Processor-B			
TA7230 Toshiba				ZN459C GEC Plessey				YM3428 Yamaha			
TA7232 Toshiba				ZN460 † GEC Plessey				Tone Control, Serial			
TA7233 Toshiba				ZN460C GEC Plessey				TC9156 Toshiba			
TA7269 Toshiba				ZN460CP GEC Plessey				Tone Control, Up and Down			
Power Amplifier, Dual (for portable radio, cassette)				LM1837 National				TC9155 Toshiba			
NJM2073 NJR (3594)				LM3080 National				Tone Controller w/ Source Inputs, Active, i ² C			
Power Amplifier, Dual (for small radio, headphones)				LM3080A National				TEA6300 Signetics			
NJM2076 NJR				LM1837 SGS-Thomson				Voice Module (increases voice channel BW to 8:1 compression)			
NJM2096 NJR				TDA3410 SGS-Thomson				CA16M801 Newbridge			
Power Amplifier Dual, 5–10 Watts				TDA3420 SGS-Thomson				Voice Scrambler			
HA13119 Hitachi				TA7063 Toshiba				LC8931 Sanyo			
LM2878 National				TA7120 Toshiba				Voice Synthesizer			
LM2879 National				TA7122B Toshiba				LC8200 Sanyo			
TDA2004 SGS-Thomson				TA7129A Toshiba				Voltage Controlled Amplifier, dbx			
TDA2005 SGS-Thomson				TA7136A Toshiba				μPC1252HA2 NEC			
TEA2021 SGS-Thomson				TA7322 Toshiba				Voltage Controlled Amplifier (188 dB dynamic range)			
TEA2024 SGS-Thomson				Preamplifier, Microphone				SSM2018 AD (3354)			
TDA1510 Signetics				SSM2015 AD (3344)				Volume Balance Tone Control, Dual			
TDA1515A Signetics				SSM2016 AD (3344)				GL3230 GoldStar			
TA7227 Toshiba				Preamplifier, Dual				Volume Control, Serial			
TA7240A Toshiba				XR4739 Exar				TC9154 Toshiba			
TA7241A Toshiba				XR4739M † Exar				Volume Control, Up and Down			
TA7252 Toshiba				LM1897 National				TC9153 Toshiba			
TA7263 Toshiba				LM381 National				Volume Controller, Two Channel (selection of volume, balance, loudness)			
TA7264 Toshiba				LM382 National				MB37032 Fujitsu			
TA7270 Toshiba				LM387 National				MB87032 Fujitsu			
TA7271 Toshiba				LA3160 Sanyo				Volume Controller, 6-Bit/4 Channel (gain controlled from 0 to 32 dB in 0.5 dB steps)			
Power Amplifier, Dual (10W)				LA3161 Sanyo				MB87077 Fujitsu			
STK4112II Sanyo				L387A SGS-Thomson				MB87078 Fujitsu			
Power Amplifier, Dual (20W)				TDA2320A SGS-Thomson				Dual DC Operated Tone/Volume/Balance Circuit			
STK4132II Sanyo				TA7325 Toshiba				LM1036 National			
STK4412 Sanyo				TA7359 † Toshiba				TA7630 Toshiba			
Power Amplifier, Dual (25W)				TA7658 Toshiba				Dual DC Operated Tone/Volume/Balance Circuit with Stereo Enhancement			
STK4432 Sanyo				TA7685 Toshiba				LM1040 National			
Power Amplifier, Dual (30W)				TA7709 Toshiba				Dual Equalizer Amp and ALC			
STK4151V Sanyo				Preamplifier, Dual (with ALC)				KA22241 Samsung			
Power Amplifier, Dual (40W)				μPC1313HA NEC				Dual Equalizer Amp and REC Amp			
STK4171II Sanyo				KA2224 Samsung				KA22261 Samsung			
STK4171V Sanyo				Preamplifier, Dual with Auto-Reverse				Dual Power Amplifier (5.8 W)			
Power Amplifier, Dual (50W)				NJM2067 NJR (3594)				KA2211 Samsung			
STK4191II Sanyo				Preamplifier, Quad				Dual Power Amplifier (1 W)			
STK4191V Sanyo				XR4212 Exar				KA2214 Samsung			
Power Amplifier, Dual (70W)				Real Time Error Correction for CD-ROM Decode				Dual Power Amplifier (4.5 W)			
STK4211V Sanyo				LC8951 ♦ Sanyo				KA22062 Samsung			
Power Amplifier, Dual (100W)				Receiver System				Dual Pre-Amp for Auto Reverse (cassette recorders)			
STK4231II Sanyo				TDA2220 SGS-Thomson				KA22131 Samsung			
Power Amplifier, Dual (2.3 W)				TDA7220 SGS-Thomson				Dual Pre-Amplifier (for 3V radio stereo-cassette recorder)			
KA2206 Samsung				SCSI Protocol Controller				KA2225 Samsung			
Power Amplifier, Dual (5.5 W)				LC8945 ♦ Sanyo				Dual Pre-Power Amp and DC Motor Speed Control			
KA2210 Samsung				Signal Delay				KA22135 Samsung			
Power Op Amp				MN3001 Panasonic				Quad Amp			
LA6500 Sanyo				MN3010 Panasonic				LA4640 Sanyo			
LA6520 Sanyo				MN3204 Panasonic				One Chip Tape Recorder System			
Pre-Amplifier, Dual				MN3207 Panasonic				KA2213 Samsung			
KA2228 Samsung				Sound Generator Controller for Microprocessor-Based Systems				7W Power Amplifier			
Pre-Amplifier, Dual with ALC				NCR8496 NCR				μPC1310 NEC			
KA22242 Samsung				Sound Recording and Playback LSI Chip				19W, Dual BTL Power Amplifier			
Pre-Amplifier, Three-Band Dual Graphic Equalizer				LR3990 Sharp				μPC2502 NEC			
KA22232 Samsung				Sound Signal Processor, Digital Compressor				20W Dual Power Amplifier			
Pre-Amplifier, Five-Band Dual Graphic Equalizer				YM3412B Yamaha				μPC1335 NEC			
KA22234 Samsung				Speech Synthesis Processor							
Pre-Servo Amplifier (for CD player)				LR3681 Sharp							
XD777A0 Yamaha				Stereo Modulator							
				NJM2035 NJR							
				Stereo Sound Control System							
				CA3259 Harris							
				Stereo 20-Bit D/A Converter (with 3rd order noise shaper)							
				SAA7350 Signetics (3631)							

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Audio Circuits (Cont'd)				10 Digit Basic Calculator Circuit	KS6029	Samsung		Analog Watch Circuit, Motor Output	KS5243	Samsung	
50 to 110W Power Amplifier Driver	μPC1342	NEC		10 Digit Desktop/Basic Calculator Circuit	KS6027B	Samsung		CCD Clock Driver, Dual	M66700	Mitsubishi	
Automotive Circuits				10 Digit Scientific Calculator Circuit (56 function)	KS6041	Samsung		CCD Clock Driver, Quad	M66705	Mitsubishi	
Alternator Voltage Regulator	L485	◊ SGS-Thomson		12 Digit Basic Calculator Circuit	KS6027C	Samsung		Clock Automotive, with Vacuum Fluorescent Display Drivers	SCL5458	Allegro Micro	75
Automotive Lamp Monitor	ULN2455A	Allegro Micro		12/10 Digit Desktop/Basic Calculator Circuit	KS6027A	Samsung			SCL5466	Allegro Micro	
Clock	μPD6529	NEC		10/12-Digit Calculator	UM3150	UMC			SCL5467	Allegro Micro	
Clock with Vacuum Fluorescent Display Drivers	SCL5233	Allegro Micro		8-Digit Calculator	UM3135	UMC			SCL5604	Allegro Micro	
Electronic Ignition Circuit	NCM6001Z	NCM		Camera Circuits				40	Clock Circuits (See Also: Digital—CMOS Oscillators/Dividers. Linear—Other Linear Devices—Oscillator)		
Electronic Ignition Control, Magnetic	L482	◊ SGS-Thomson		Exposure Control	CS102	Cherry Semi			SCL5233	Allegro Micro	
	L484	◊ SGS-Thomson		NTSC 1H Delay Line Charge Coupled Device	LC8991	Sanyo			SCL5238	Allegro Micro	80
	L497	◊ SGS-Thomson		Strobe Light Controller	U2000B	AEG Corp			SCL5455	Allegro Micro	
High Energy Ignition Circuit	MC3334	Motorola		Synchronizing Signal Generator for Video Camera (for NTSC, PALM, PAL and SECAM)	CXD1217	Sony			SCL5463	Allegro Micro	
High Energy Ignition Circuit (Flip-Chip)	MCCF3334	Motorola		Video Camera Encoder	HA11720	Hitachi			SCL5468	Allegro Micro	
High Side Driver (high stress applications)	CA3273	Harris		CB Radio Circuits					SCL5474	Allegro Micro	
High Side Driver, Single	HA13702	Hitachi		Channel Selector/Display Driver	LC7181	Sanyo			SCL5601	Allegro Micro	85
Inductive Load Driver, Quad	HA13007A	Hitachi			LC7191	Sanyo			MM53110	National	
	HA13415	Hitachi		Synthesizer Set, 40 Channel, BCD Channel Setting	LC7131	Sanyo		Crystal Clock LSI, 32 kHz (CMOS)	LR3468	Sharp	
Injector Drive Controller	LM1949	National		Clock/Watch Circuits				45	Digital Tuner	MM58142	National
Injector Drive Control	L583	SGS-Thomson		Alarm Clock	KS5206	Samsung		LCD Digital Clock	LR3441	Sharp	
Lamp Open Detector (single lamp failure detection among 2 to 4 lamps)	MB4210	Fujitsu			KS5207	Samsung		LCD Display Digital Clock LSI (3 1/2 digit hour/minute display)	NJU6351	◊ NJR	90
Multiplex Communications (8-bit programmable counter)	CDP1863	Harris			LM8361	Sanyo		LCD Display Digital Clock LSI (3 1/2 digit hour/minute display)	NJU6354	◊ NJR	
Noise Blanker	CA3258	Harris		Alarm Clock Radio	LM8364	Sanyo		LCD Watch Circuit, 3.5 Digit	KS5120	Samsung	
PLL FM Multiplex Stereo Demodulator	CA3257	Harris		Alarm Clock/Radio Circuit	NCM3459Z	NCM		LCD Watch Circuit, 4 Digit	KS5194A	Samsung	
Power Switch w/Current Limiter Sense Flag	CA3274	Harris		Analog Alarm Clock	UM3252	UMC		LCD Watch Circuit, 6 Digit	KS5112	Samsung	95
Sealed Lead-Acid Battery Charger	UC2906	Unitrode			UM3253	UMC			KS5184	Samsung	
Speed Control	CA3228	Harris			UM3262	UMC			KS5190	Samsung	
Voltage Regulator	MC3325	Motorola		Analog Alarm Clock w/Snooze	UM3254	UMC		Melody Circuit, for Clocks	2009Z	NCM	
	TEA7034	SGS-Thomson		Analog Clock Circuit	KS5209	Samsung			KS5310A	Samsung	
Voltage Regulator (with reverse battery protection)	CA3276	Harris			KS5210	Samsung			KS5310C	Samsung	
Dual H-Driver (for instrumentation)	CA3275	Harris			KS5211	Samsung			KS5313	Samsung	100
Quad Driver, See also Interface—Memory and Peripheral Drivers	DS3656	National			KS5221	Samsung			KS5314	Samsung	
Quad-Gated Power Driver (interfaces low-level logic to high-current loads)	CA3272	Harris		Analog Clock (drives a stepping motor)	NJU6301	◊ NJR			KS5340	Samsung	
20-Watt Automotive Power Amplifier	LM2005	National			NJU6302	◊ NJR			KS5380	Samsung	55
Calculator Circuits				Analog Clock with Electronic Melody Generator	LR34651	Sharp		Watch (LCD), Digital	KS5199A	Samsung	
Eight Digit Basic Calculator Circuit	KS6025B	Samsung		Analog Clock with Snooze Function (soft start alarm sound)	NJU6304	◊ NJR		Watch (LCD), Digital with Alarm	KS5194	Samsung	105
	KS6026	Samsung		Analog Clock (4.19 MHz crystal)	LR3428	Sharp		3 1/2 Digit Multiplexed LCD Alarm Clock	UM3273	UMC	
	KS6028	Samsung			LR3429	Sharp		4-Digit Multiplexed LCD World Time Clock	UM3280	UMC	
				Analog LCD Watch Circuit, 3 Hand (120 segment)	KS5113	Samsung		5 Function 3 1/2 Digit Multiplexed LCD Watch	UM3203	UMC	
									UM3219	UMC	
				Analog Watch	UM3231	UMC		5 Function 4-Digit Multiplexed LCD Watch w/Alarm	UM3216	UMC	110
								6-Digit Multifunction Watch	UM3217	UMC	
								Music			
								Accompaniment Generator for Chords, Arpeggi, Keyboard or Pedalboard Bass	M151	SGS-Thomson	
								Consumer Music Synthesizer, 32 Voices	ICS1261	IntCirSys	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Music (Cont'd)											
Digital-to-Audio Converter				Random Music Selector, 9-Program	IR3R24	Sharp		Stereo Decoder	MC13022	Motorola	
PCM53	Burr-Brown			Simple Melody Generator	UM3161	UMC		Tuner for Car Radio	TA7402	Toshiba	
PCM54	Burr-Brown			UM3166	UMC			TA7616	Toshiba		
PCM55	Burr-Brown			UM66T	UMC			Tuner System	LA1240	Sanyo	85
PCM56	Burr-Brown			Sound Color Changeable Musical Instrument	NJU5202	NJR	45	LA1245	Sanyo		
PCM58	Burr-Brown			Sound Generator, Stereo, for Music and Sound Effects	SAA1099	Signetics		Radio Circuits, AM/FM			
				Toy Organ	KS5390	Samsung		AF Pre Amp	LA3550M	◊ Sanyo	
Dolby B-Type Noise Reduction Processor				Voice Synthesizer, 1.5 sec. Speaker and Piezo Driver	NJU5502	◊ NJR		AM/FM Digital Tuning Synthesizer	TSA6057	Signetics	
LM1112A	National			Voice Synthesizer, 1.5 sec Piezo Buzzer Direct Drive	NJU5503	◊ NJR		AM/FM HF Amplifier	LA1265	Sanyo	
LM1112B	National			NJU5504	◊ NJR		50	AM/FM IF Amplifier	TDA1220B	AEG Corp	90
LM1112C	National			Voice Synthesizer, 3 sec Piezo Buzzer Direct Drive	NJU5505	◊ NJR		AM/FM IF System	KA2243	Samsung	
Dolby Surround Sound	LA2770	Sanyo		NJU5506	◊ NJR			AM/FM One-Chip Radio	KA22424	Samsung	
Electret Preamplifier (for electret microphones)	LB1027A	AT&T	10	Three Siren Sound Generator	UM3561	UMC		AM/FM One-Chip Radio Circuit	KA22427	Samsung	
Electronic Attenuator	XR13600	◊ Exar		Radio Circuits, AM				Antenna Diversity Circuit	LA1061M	Sanyo	
Frequency Divider, 7-Stage				AM IF and Detector, Double Conversion				Audio Power Amplifier	TDA2040	AEG Corp	95
M740	SGS-Thomson			SL6700A	GEC Plessey		55	Auto Program Search Chip	IR3R32	Sharp	
M741	SGS-Thomson			SL6700C	GEC Plessey			Bandswitch Operational Amplifier	CA3263	Harris	
M747	SGS-Thomson			AM IF Circuit	LA1137	Sanyo		Broadband Demodulator System (Configurable for AM or FM Based Signals)			
Graphic Equalizer, 5-Band	M5226	Mitsubishi	15	AM Radio Receiver	μPC1322	NEC		LM1211	National		
High Fidelity Music Synthesizer, 25 Voices, Digital Filters	ICS1399	IntCirSys		μPC1344	NEC			Car-use AF Pre Amp	LA3161	Sanyo	100
Melody Circuit, Harmonic with Rhythm Box	NJU503	◊ NJR		AM Radio Receiver Chip	IR3R26	Sharp		Car-use FM Mixer IF, AGC	LA1177	Sanyo	
Melody Circuit, Speaker Drive	KS5814	Samsung		AM Receiver for AM Stereo	TDA4010	Siemens	20	Car-use Stereo Demodulator	LA3430	Sanyo	
Melody Circuit, Speaker or Piezo Drive				AM Receiver with IF Output	TDA1572	Signetics		Car-use One-chip Tuner for	LA1886M	◊ Sanyo	
KS5381	Samsung			AM Receiver with up Conversion	TEA6200	Signetics		Cellular Radio Receiver (bipolar)	CA412	Newbridge	65
KS5381A	Samsung			AM Stereo Front End and Tuner Stabilizer	MC13023	Motorola		Digital Tuning System			
Melody Circuit, Single-Tone				AM Tuner System (converter, IF amp, detector)	KA22461	Samsung	25	TC9140	Toshiba	105	
NJU501	◊ NJR			AM One-Chip Radio	KA22421	Samsung		TC9146	Toshiba		
NJU505	◊ NJR			CQUAM AM Stereo Decoder	MC13020	Motorola		TC9147	Toshiba		
Melody Circuit, Single-Tone with LED Blinking Function	NJU502	◊ NJR		Frequency Synthesizer	DS8910	National		Digital Tuning System, 4-bit microcomputer			
Melody Circuit, Single-Tone (with tri-state buffer)				High-Level Mixer	SL6440C	GEC Plessey		MB88561	Fujitsu		
NJU511	NJR			Radio Circuit, AM Stereo Noise Blanker	ULN3845	Allegro Micro	30	MB88562	Fujitsu		
NJU512	NJR			Radio System for Electronically Tuned Radios	LM1863	National		Display Driver for Receiving Frequency Digital Display	TD6301A	Toshiba	70
Melody Circuit, Eight Sound Effect (speaker drive)	KS5401	Samsung		Receiver System				Dolby Surround Pro-logic	LA2770	Sanyo	110
Melody Circuit (255 note capacity Mask-programmable ROM)	LS3404	LSI Comp (3565)		ULN3839A	Allegro Micro			Dolby Surround Pro-logic Noise Sequencer	LA2775	Sanyo	
Melody Generator (automatic)	LR34611	Sharp		ZN415E	GEC Plessey			Electronic Tuning AM Receiver for Car Stereo	KA22461	Samsung	
Melody Generator (by piezo-electric buzzer)	LR34621	Sharp		ZN416E	GEC Plessey			Electronic Tuning System	LA1875M	◊ Sanyo	
Melody Generator With Accompaniment				CA3088	† Harris		75	FM/AM IF System	IR3R27A	Sharp	
UM3491	UMC			TDA1072	Signetics			FM IF/AM Tuner System			
UM3492	UMC			TA7641B	Toshiba			KA2247	Samsung	115	
Melody Organ Generator	UM3511	UMC		Receiver System (AM radio circuit)	ULN3841	◊ Allegro Micro		KA22471	Samsung		
Monophonic Synthesizer	M110	SGS-Thomson		RF, IF Detector	LM3820	National		KA2248A	Samsung		
Multi-instrument Melody Generator	UM348X	UMC		RF, IF, Detector, AGC	ZN414Z	GEC Plessey	80	FM IF System, Low Power	NE614A	Signetics	
Music Selector (9 program, random)	KA2230	Samsung	35	SSB Detector	SL623C	GEC Plessey					
Musical Instrument with High Accurate Pitch	NJU5201	NJR									
Paper Organ	UM3522	UMC									
Polyphonic Sound Generator	M112	SGS-Thomson									
Random Music Selector, 5-Program											
IR3R20A	Sharp										
IR3R31	Sharp		40								

† Mil Temp Range (−55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Speech Circuits (Cont'd)				Amplifier, with AGC, for Recorders				Tape Recorder Circuits, Video			
Speech Recognition				TA7137	Toshiba			Timer/Driver, Precision 16 Channel	CD22401	Harris	75
MSM6253	OKI	(3600)		TA7137-ST	Toshiba			VCR Audio Play/Record	GL3615	GoldStar	
Speech Recognition LSI				Audio System	LM1818	National	40	Television Circuits			
T6658A	Toshiba			Auto Reverse and Auto Eject Plunger Driver				Microprocessor Interface	M206	SGS-Thomson	
Speech Recording and Reproduction with DRAM				TD6304A	Toshiba			Microcontroller for Television and Video			
UM93520	UMC			TD6308A	Toshiba			P87C054	Signetics (3637)		
Speech Recording and Reproduction with SRAM				TD6309	Toshiba			87C054	Signetics (3637)		
UM93510	UMC			Automatic Cuing Circuit	LC7512	Sanyo		Microcontroller for Television and Video (16Kx8 ROM)	83C054	Signetics (3637)	80
Speech Scrambler/Descrambler				Automatic Music Selection				Microcontroller for Television and Video (8Kx8 ROM)	P83C053	Signetics (3637)	
COM9046	SMC			TC9165	Toshiba		45	83C053	Signetics (3637)		
Speech Synthesis (Male/Female)				TC9167	Toshiba			Analog Interface Unit	CA3247	Harris	
PCF8200	Signetics			Automatic Music Selection, Index Scan				FM/IF Amplifier-Limiter and Quadrature Detectort	CA2136A	Harris	
Speech Synthesis Processor				TC9166	Toshiba			AFC/Horizontal Oscillator Signal Processor with Sync Separator and AGC	CA3261	Harris	85
SC01				Automatic Program Search				Analog Interface for Telex System			
Speech Synthesizer, Microprocessor and Memory				TC9138A	Toshiba			KA6101	Samsung		
TSP50C41	TI			TC9139A	Toshiba			KA6102	Samsung		
TSP50C42	TI			Broad Band Compandor				Audio and Video Switch	KA2186	Samsung	
TSP50C43	TI			NE572	Signetics		50	Audio/Video Switch	GL3810	GoldStar	
TSP50C44	TI			NE575	Signetics (3668)			Auto Focus	RF3L06	Ricoh	90
Speech Synthesizer, ADPCM				Controller (mode change, absence recording)	TC9121	Toshiba		AV Switch for TV	IR3P27	Sharp	
MSM5205	OKI			CVSD Voice Recorder (continuously variable slope delta-modulation)				Bilingual Signal Processor	GL3813	GoldStar	
MSM5248	OKI	(3605)		TSP3477	TI			Broadband RF Amplifiers			
MSM6212	OKI			Digital Audio Tape (DAT) System, Drum Capstan Driver	HA13403	Hitachi		MWA0270	Motorola		
MSM6243	OKI			Digital Audio Tape (DAT) System, Filter	HD49202	Hitachi		MWA0304	Motorola		
L6212	SGS-Thomson			Digital Audio Tape (DAT) System, PLL Data Strobe	HA12062	Hitachi		MWA0311	Motorola		
Speech Synthesizer Chip (duration: 15 sec.)				Equalizer Amplifier with ALC	KA2220	Samsung		MWA0370	Motorola		95
MSS1501	Mosel			IC Switch (cassette)				Camera Sync. Generator			
Speech Synthesizer Chip (duration: 20 sec.)				TC9143	Toshiba			ZNA134E	GEC Plessey		
MSS2001	Mosel			TC9144	Toshiba			ZNA134J	† GEC Plessey		
Speech Synthesizer Chip (duration: 3 sec.)				Motor Speed Control (automatic stop, dc manual stop, biasing and erasing oscillator)	TDA7770	SGS-Thomson		HD44007A	Hitachi		
MSS0301	Mosel			Motor Speed Control, Stop, Pause, Cassette Ejection	TDA7270	SGS-Thomson		CATV Amplifiers (hybrid), 27 dB, 330 MHz	HSW3272A	Motorola	100
Speech Synthesizer Chip (duration: 6 sec.)				Power Amplifier (cassette)	TA7283	Toshiba		Channel Display and Clock	MM58146	National	
MSS0601	Mosel			Power Amplifier (minicassette)	TA7331	Toshiba		Channel Display Driver/Decoder	U143M	AEG Corp	
Speech Synthesizer, Voice, Music and Sound Effects				Preamplifier, for Auto-Reversing Systems				Chroma Circuit (horizontal/vertical, digital video)	HA11532	Hitachi	
SC02				LM1837	National			Chroma Circuits (demodulators, IF amplifiers, luminance control, signal processors, and various combinations)			
Variable Speech Controller				LM1837	SGS-Thomson			TDA3506	AEG Corp		
IR3R41	Sharp			Preamplifier, Low-Noise Dual, for Autoreverse Car Stereo	TA7405	Toshiba		TDA3560A	AEG Corp		
IR3R51	Sharp			Preamplifier with ALC	TDA2054	SGS-Thomson		TDA3562A	AEG Corp		
Voice Band Inverter				Preamplifier with ALC (minicassette)	TA7330	Toshiba		GL3320	GoldStar		
MX014	MX-COM			Signal Level Sensor System (for microcassette)	NJM2072	NJR	70	CA3070	Harris		
Voice Recorder and Reproducer				Tape Deck Amplifier System	TA7663	Toshiba		CA3126	Harris		
UM5101	UMC			Tape Deck Amplifier, Dual Channel	TA7639	Toshiba		CA3194	Harris		
Voice Recording and Reproducing LSI				Single-Key On-Tape Program Selector	HA12054	SGS-Thomson		CA3217	Harris		
KS5911	Samsung			Dual Preamplifier for Auto-Reverse Car Stereo	TA7705	Toshiba		HA11247	Hitachi		
Voice Recording/Reproducing LSI								HA11431NT	Hitachi		
T6668	Toshiba							HA11436A	Hitachi		
Voice Store Retrieve Codec								HA11480	Hitachi		
MX709	MX-COM							MC1377	Motorola		
Voice Synthesis LSI, Single Chip ADM								TDA3301	Motorola		
T6667	Toshiba							TDA3303	Motorola		
Voice Synthesis, 4-Channel ADPCM								(Continued)			
MSM6295	OKI	(3605)									
Voice Synthesizer											
UM5000	UMC										
UM5100	UMC										
Voice Synthesizer Circuit, ADM Method											
KS5912	Samsung										
Voice Synthesizer Circuit, LPC Method											
KS5901A	Samsung										
KS5902	Samsung										
Voice Synthesizing LSI											
T6721A	Toshiba										
T6803	Toshiba										
VSB Inverter	MX214/224	MX-COM									
Tape Recorder Circuits, Audio											
Amplifier System (for cassette recorders)											
TA7738	Toshiba										

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line		
Television Circuits (Cont'd)				Digital Multistandard Television Decoder				Infrared Pre-Amplifier					
Chroma Circuits (demodulators, IF amplifiers, luminance control, signal processors, and various combinations) (Cont'd)				SAA9051		Signetics	45	KA2184		Samsung	95		
				TDA9051		Signetics		Inter-carrier Frequency Modulator					
				SAB3035		Signetics		NCM4002Y		NCM			
				SAB3036		Signetics		Inter-carrier Frequency Modulator (internal PLL and Comparator)		4002Y-A		NCM	
				SAB3037		Signetics		IR Amplifier, Narrow Band		IR3N37/N		Sharp	
				Digital Tuning System Memory Controller		TA7619A		Toshiba	IR Remote Control Amplifier			CA3237	Harris
				Digital Tuning System (PLL)		TC9137B		Toshiba	Line Buffer for NTSC TV (1135x8-bit)			μ PD42102-1	NEC (3591)
				Digital Tuning, 1.3 GHz Divider +64		SDA4212		Siemens	μ PD42102-3			NEC (3591)	
				Digital Tuning 1.3 GHz PLL		SDA3202		Siemens	Line Selector			4003Z	NCM
				Digital Volume Control		KA2611		Samsung	LSI Sync Generator (for TV and video processing systems)			CD22402	Harris
				Display Controller, 20 characters x 9 lines		MB88303		Fujitsu	Luma/Chroma Processor			HA11431	Hitachi
				Double-Balanced Mixer for UHF/VHF/HF		NE602A		Signetics	Luminance Delay			TDA4565	AEG Corp
				East-West Pincushion Correction Circuit		TDA4950		SGS-Thomson	Modulator			NCM4032Z	NCM
				Electronic Program Memory, 32-Station		M293		SGS-Thomson	Modulator Circuit			TDA5660	Siemens
				Encoder, 4:2:2		BT291		Brooktree	Modulator Circuit for Video Tape Recorders and Disc Players			MC1374	Motorola
Enhance Video Processor D/A (for video DSP chipset)		SAA9060	Signetics	Modulator Oscillator, to 600 MHz		MC13024	Motorola						
FM/IF Amplifier and Demodulator for TV/STEREO		U2829B	AEG Corp	Monochrome TV, Small-Signal Subsystem		TDA4503	Signetics						
Frequency Synthesizer		SAB3035	Signetics	Multi Sound Decoder (U.S. TVs)		μ PC1871	NEC						
Gray Scale Enhancer, Real Time		2545	OEI	Multimode Monitor Processor (horiz., vert., and video combo)		MC1384	Motorola						
Horizontal & Vertical Processor		GL1150	GoldStar	NTSC C/TV One-Chip		KA2159	Samsung						
		CA3202	Harris	NTSC Color Decoder		TDA3567	Signetics						
		CA3223	Harris	NTSC Color Difference Decoder		TDA4570	Signetics						
		HA11235	Hitachi	NTSC/PAL Decoder		V7020	Sony						
		HA11517	Hitachi			V7040	Sony						
		LM1880	National	NTSC Synchronization Generator		NCM3019Z	NCM						
		TEA2017	SGS-Thomson	NTSC TV Synchron Generator		NCM3009Z	NCM						
		TDA2578A	Signetics	On-Screen Display (48 characters, 2 lines by 12 columns)		μ PD6141C/G	NEC						
		TDA2595	Signetics	On-Screen Display (64 Characters, 12 lines by 24 columns)		μ PD6142C/G	NEC						
Horizontal Processor		TDA1940	AEG Corp	On-Screen Display (64 characters, 2 lines by 16 columns)		68X6143-120	Micro-C						
		TDA1950	AEG Corp	μ PD6143C/G		NEC							
		TDA2591	AEG Corp	On-Screen Display (64 characters, 6 lines by 16 columns)		μ PD6144C/G	NEC						
		TDA2593	AEG Corp	On-Screen Display (128 characters, 12 lines by 24 columns)		μ PD6145C/G	NEC						
		CA1391	Harris	PAL/NTSC Color Decoder		TDA3566	Signetics						
		CA1394	Harris	PAL/NTSC Decoder w/ RGB Inputs		TDA2582	Signetics						
		CA3210	Harris	PAL/NTSC TV Sync Generator		SAA1101	Signetics						
		MC1391	Motorola	Pattern Generator		4001Z	NCM						
		LM1391	National	Phase Control		U210B	AEG Corp						
		TBA920	SGS-Thomson	Picture Tube Bias Circuit, Automatic		CA3224	Harris						
		TDA1180	SGS-Thomson										
		TDA2593	SGS-Thomson										
		TDA2593	Signetics										
		TDA2594	Signetics										
Horizontal Signal Processing System		KA2135	Samsung										
		KA2137	Samsung										
IF Amplifier/Detector		TBA120T	AEG Corp										
IF and PLL Detector System		MC44301	Motorola										
IF Circuit		HA11485	Hitachi										
Image Colorizer, Real Time (256 colors)		6730	OEI										
In-Set TV Pattern Control Logic		NCM3010Z	NCM										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Television Circuits (Cont'd)				Sound Circuits (Cont'd)				TV Horizontal/Vertical Countdown Digital Sync System for 525-Line Operation			
Picture-in-Picture AD/D-A (video chipset)	MB40176	Fujitsu		TA7176A	Toshiba		45	CA3218	Harris		
Picture-in-Picture Circuit	LC7440	Sanyo		TA7243	Toshiba			CA3236	Harris		
	LC7480	Sanyo		TA7314	Toshiba			CA3241	Harris		
Picture-in-Picture Controller	MB86140N	Fujitsu	(3480)	TA7632	Toshiba						
Picture-in-Picture Controller (for TV/VTR)	MB86152	Fujitsu		Sound IF and Audio Output	KA2102A	Samsung		TV Multiplexer/Demodulator Chip	IR3P59A	Sharp	90
								IR3P77	Sharp		
Picture-in-Picture Generator (allows multiple video inputs to be viewed on one TV screen)	μPD42272	NEC	(3591)	Sound IF Subsystem for Multiplex	KA2105	Samsung	50	TV Multiplexer/Demodulator (Europe)	IR3P02	Sharp	
Picture-in-Picture Phase Lock Loop (video chipset)	MB3511	Fujitsu		KA2106	Samsung			TV NTSC One-Chip	LA7670	Sanyo	
Picture-in-Picture Dual-Port RAM (video chipset)	MB81461	Fujitsu		Sound IF System	KA2101	Samsung		TV RGB Pattern Generator	NCM4001Z	NCM	
PIF Circuit	GL3101A	GoldStar		Sound Mute System for TV	KA2103L	Samsung		TV Synchron Generator	NCM2001Z	NCM	95
Remote Control Receiver, PCM	M104	SGS-Thomson		Sound Muting & Auto Power OFF	KA2104	Samsung		NCM2011Z	NCM		
Remote Control Transmitter (key in/out, driver, output control, osc., data register)	KS5803A	Samsung		Sound MUX (Two carrier system)	KA2268N	Samsung	55	TV, VCR, PLL, Video and Sound IF	LA7550	Sanyo	
Remote Control Transmitter, PCM	M709	SGS-Thomson						TV Voltage Synthesizer Controller (CMOS)	LR3772	Sharp	
	M710	SGS-Thomson		Sound, Parallel IF	GL3202	GoldStar		LR3790	Sharp		
RF Modulator	CA1890	Harris		Source, Select, Gain Control and A/D (for video DSP chipset)	TDA8708	Signetics		LR3791	Sharp		
	HA11466S	Hitachi		Stereo Decoder	LM1884	National		U. S. Multi-Sound Decoder	μPC1870CA	NEC	100
RGB Amplifier	TDA8153	SGS-Thomson		Synchron Generator	2001Z	NCM		UHF Power Amplifier	MHW707	Motorola	
RGB Interface for TV	IR3P32A	Sharp						MHW720A	Motorola		
RGB Pattern Generator	NCM4011Z	NCM		Sync Generator	CA3254	Harris	60	MHW721A	Motorola		
RGB Sign Mixing Amplifier for TV	IR3P56	Sharp			CA3255	Harris		UHF/VHF Modulator	TDA5664	Siemens	
RGB Switch for TV	IR3P36	Sharp			HD440072	Hitachi		UHF/VHF Tuner	TDA2017	Siemens	105
RGB to NTSC Converter	6291	OEI		Sync Separator	HA11423	Hitachi		Unity Gain Level Programmable Low Power Comparator	SA578	Signetics	(3670)
RGB Video Amplifier System (for high resolution RGB color monitors)	LM1203	National		Sync Separator (phase inverter, horiz. sync separator, vert. sync separator, composite sync separator, vert/horiz filter)	KA2605	Samsung	20	VCR Data-Back LSI Circuit	LR3727	Sharp	
RGB Video Processor (for video DSP chipset)	TDA4680	Signetics			KA2606	Samsung		Vertical Deflection	LA7800	Sanyo	
RGB/YUV Switch	TDA8443	Signetics		Synchronization and Deflection Circuit	LA7801	Sanyo			TDA1170	SGS-Thomson	
	TDA8443A	Signetics			LA7806	Sanyo			TDA1170D	SGS-Thomson	
Sign Mixer for TV	IR3P54A	Sharp		Synchronization Circuit	TDA2579	Signetics			TDA1170N	SGS-Thomson	
Signal Processor, Bilingual	CA3154	Harris		Teletext Data Slicer	GL3917	GoldStar			TDA1670	SGS-Thomson	
SMPS Controller	TDA4601B	SGS-Thomson		Test Pattern Generator	ZNA234	GEC Plessey	25		TDA1770	SGS-Thomson	
Sound and Picture Processor	GL3120	GoldStar		Tone Control	TDA1524A	Signetics			TDA2270	SGS-Thomson	
	HA11485ANT	Hitachi		Traffic Camera Controller	4004Z	NCM			TDA8170	SGS-Thomson	
Sound Circuits	TBA750	GEC Plessey		Tuner Band Switching	TA7315B	Toshiba			TDA8172	SGS-Thomson	
	GL3201A	GoldStar		Tuner Controller	SL952	GEC Plessey			TDA2653A	Signetics	
	CA1190	Harris			GL3711	GoldStar			TDA3653	Signetics	
	CA1191	Harris		Tuner, VHF Mixer-Oscillator	TDA5030	Signetics	30		TA7242	Toshiba	
	CA3065	Harris		TV Analog Switch	IR3P76	Sharp		Vertical Deflection Output Circuit	TDA3654	Signetics	120
	TDA3190P	Motorola		TV Base-Brand Interface	LA7970	Sanyo	35	Vertical Deflection System	KA2130A	Samsung	
	TDA1190	SGS-Thomson		TV Display Controller	MB88313	Fujitsu			KA2136	Samsung	
	TDA3190	SGS-Thomson			MB88321	Fujitsu		Vertical Output (driver, output, flyback gen., pulse shaper)	KA2131	Samsung	
	TDA4190	SGS-Thomson			MB88322	Fujitsu		Vertical Output (14 to 21 inch CRT tube)	μPC1488H	NEC	
	TDA8190	SGS-Thomson			MB88323	Fujitsu		Vertical Output (22 to 29 inch CRT tube)	μPC1498H	NEC	125
	TBA130-2	Siemens			MB88324	Fujitsu		VHF Mixer	U4777B	AEG Corp	
	TDA2545A	Signetics			MB88325	Fujitsu		VHF Mixer/Oscillator, Low Power	NE612	Signetics	
	TDA2546A	Signetics			MB88331	Fujitsu	40	Video Amplifier (single channel, 100 MHz)	HA11505	Hitachi	
	TA7130	Toshiba						Video and Sound IF Amp for Monochrome TV	KA2913A	Samsung	
			(Continued)						KA2917	Samsung	130
								Video Chroma and Deflection Signal Processing	IR3P04B	Sharp	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Television Circuits (Cont'd)											
Video Circuits (IF amplifiers, detectors, AGC, AFC, and various combinations)				Video Sync-Stripper				LED/Lamp Driver for VTR (4 NPN transistor array)			
TDA4426 AEG Corp				RSS100C ThirdDomain				KA2615 Samsung			
TDA4427 AEG Corp				RSS100M † ThirdDomain				KA2616 Samsung			
TDA4440 AEG Corp				Video-Chroma Deflection System for Color TV				KA2617 Samsung			
TDA4442 AEG Corp				KA2153 Samsung				KA2618 Samsung			
TDA4450 AEG Corp				KA2154 Samsung							
SL1430 GEC Plessey				VIF and SIR Circuit				Luminance Signal Processor			
SL1431 GEC Plessey				GL3130 GoldStar				KA8103 Samsung			
SL1432 GEC Plessey				Wide Band Mixer/Oscillator for TV/VTR Tuners				Mixer Circuit, Video Processor			
TDA440 GEC Plessey				μPC1685 NEC				CA3253 Harris			
HA11440A Hitachi				Wide Band Mixer/Oscillator/IF Amplifier for VHF				Motor Driver			
HA11476 Hitachi				μPC1686 NEC				KA8304 Samsung			
MC13001 Motorola				Wideband Variable Gain Amplifier				KA8306 Samsung			
MC13001X Motorola				NE5209 Signetics (3671)				Motor Driver for VTR (preamp, logic circuit, driver)			
MC13002 Motorola				SA5209 Signetics (3671)				KA8301 Samsung			
MC13002X Motorola				One Chip Deflection System				Multi-Sync Monitor TTL to Analog Input Interface (converts TTL inputs to RGB outputs)			
MC13010 Motorola				KA2133 Samsung				MC1382 ♦ Motorola			
MC1330A1 Motorola				Z8 Digital Television Controller (Z8 core MPU with 8 Kbyte program ROM)				Multimode Monitor Processor (horizontal, vertical, and video)			
MC1350 Motorola				Z86C27 Zilog				MC1383 Motorola			
LM1822 National				128 Character On Screen Display				Multistandard Video IF			
LM1823 National				μPD6450 NEC				TDA4439 AEG Corp			
LM1886 National				128 Character On Screen Display with Double Scan TV Mode				NTSC Chroma and Deflection System			
LM1889 National				μPD6451 NEC				KA2156 Samsung			
LM2889 National				900 MHz Power Amplifier				PIF and SIF Circuit			
TBA1440G SGS-Thomson				MHW801 ♦ Motorola				GL3130 GoldStar			
TBA1441 SGS-Thomson				MHW803 Motorola				Pre-Amplifier, Equalizer Amp, Chrominance Amp			
TDA2540 SGS-Thomson				MHW807 Motorola				KA8102 Samsung			
TDA2541 SGS-Thomson				MHW851 Motorola				Recording/Playback Amp (Switchless)			
TDA2542 SGS-Thomson								KA2983 Samsung			
TDA4501 Signetics								KA8401 Samsung			
TDA4502 Signetics				Video				Remecon Transmitter			
Video Control Combo Circuit w/ Auto Cut-Off Control				Audio/Video Switch				KA5803A/B Samsung			
TDA4580 Signetics				KA8402 Samsung				RF Amplifier, Precision FET-Input			
Video, IF and RF Amplifier				Auto White Balance Circuit				LH4117 National			
VA592 VTC				HA11844B Hitachi				LH4117C National			
VA733 VTC				Broadcast Quality Two Channel Video Multiplier				RF/IF Circuit, Video IF Amplifier/PLL Detector System			
Video IF and RF Amps				GT4122 Gennum (3496)				LM1822N Harris			
MC3361 Signetics				Buffer with Sync Tip Clamp				LM1823N Harris			
NE604A Signetics				GB4550 Gennum (3496)				RF/IF Circuit, Video IF Amplifier System for NPN Tuner Stages			
NE605 Signetics (3665)				Buffered Amplifier (for video gain block, zero insertion loss line driver)				CA7611 Harris			
Video IF and Sound IF System for Color TV				HA5004 Harris (3508)				RF Modulator (for VCR)			
KA2914A Samsung				Cable/Line Driver (for impedance matching)				NJM2219 NJR (3594)			
KA2918 Samsung				VN3018 Vanguard Semi				RF Modulator, Video Clamp			
KA2919 Samsung				Chroma Single Processor				KA2981 Samsung			
Video IF Processor for B/W TV				KA2988 Samsung				RF-IF Circuit, Video IF Amplifier System (suitable for FET applications)			
KA2912 Samsung				Chrominance Signal Processor				CA7607 Harris			
Video IF, Sound IF, and Detector				KA8104 Samsung				Servo Control Amp			
KA2915 Samsung				CRT Video Driver Amplifier (175 MHz bw)				KA8302 Samsung			
Video IF System for Color TV				LH3424 National				Sound Multiplexer (sound IF amp, limiter, detector, LED driver, VCO)			
KA2911 Samsung				DC Restored Amplifier, 100 MHz (with S/H amp.)				KA2268 Samsung			
KA2916 Samsung				EL2090C Elantec				Sound System (IF system and 2.4W audio power amp)			
Video Line Driver				Digital Servo Controller				KA2102A Samsung			
VLD212 ThirdDomain				KA8303 Samsung				Sync Processor, TV Horizontal/Vertical Countdown Digital Sync System			
Video Op Amp				Electronic Switch				CA3218 Harris			
HA2544 Harris (3508)				GL3816 GoldStar				CA3236 Harris			
VOA901 ThirdDomain				Encoder Circuit				CA3241 Harris			
Video Output Amplifier				HA11883 Hitachi				Sync Separator			
HA11465 Hitachi				FIP/LCD, LED Driver				GS4881 Gennum (3496)			
Video Output for CTV				μPD6320/1 NEC				Sync Separator, 50% Slicing			
STK185B Sanyo				Game Controller				GS4883 Gennum (3496)			
Video Signal Controller				UM6599 UMC				Sync Signal Generator			
VSC920 ThirdDomain				Horizontal/Vertical Scan Circuit, AFC Horizontal Oscillator Signal Processor (with sync separator and AGC)				HD44007A Hitachi			
Video Switch (high-speed multiplex)				CA3261 Harris				Synchronizing Signal Detector			
HA11544 Hitachi				LCD Column Driver, 40 Outputs				GL8121 GoldStar			
Video Switch/Multiplexer				μPD6308A NEC				Title Insertion for VCR			
VSM912 ThirdDomain				LCD Row Driver, 32 Outputs				LV4100 Sanyo			
Video Switch (pin programmable)				μPD6307A NEC				TV/μP Interface			
HA118088 Hitachi								M106 SGS-Thomson			
Video Sync Separator											
LM1881 National											
Video Sync Stripper (standard video input levels of 1–1.4 V p-p)											
RSS100A ThirdDomain											

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Video (Cont'd)											
TV Video Modulator				Video On-Screen Display Circuit	NJM2214	NJR	35	CD Player, Dual Amplifier for CDP Motor Driver	KA9257	Samsung	
NJM1372A	NJR			Video Picture Enhancer	NJM2209	NJR		Comparator plus Alarm Driver Circuitry (piezo driver and low battery detect)	MC14471	Motorola	
NJM2208	NJR			Video Signal Field Memory, 3-Port VRAM	CXK1206	Sony		Data Processor for AMPS and TACS Cellular Radios	UMA1000	Signetics (3665)	
Variable Gain Circuit with Disable, 200 MHz	EL2082C	Elahtec		Video Subcarrier Signal Doubler/Tripler	NJM2228	NJR (3594)		DC Motor Speed Control	KA2404	Samsung	
VCR Stereo Matrix, 8mm	LA7456M	o Sanyo		Video Subcarrier Signal Tripler	NJM2238	NJR		DC Motor Speed Controller	KA2401	Samsung	75
Video Amplifier for VTR (AGC, FM limiter, demodulator, sync separator, output amplifier)	KA2945	Samsung	5	Video Subcarrier Signal Quadrupler	NJM2240	NJR	40	KA2402	Samsung		
Video Amplifier (preamplifier of memory equipment, video and pulse signal)	NJM592	NJR (3594)		Video Superimposer	NJM2207	NJR		KA2407	Samsung		
Video Amplifier System (wideband, 200 MHz)	LM1201	National		Video Superimposer with AFC	NJM2217	NJR		Detection Circuit, Low Voltage	PCF1252	Signetics	
Video Amplifier (wideband : 50 MHz)	M51387	Mitsubishi		Video Switch, High Frequency (200 MHz, for use with all Harris op amps and buffers)	HI222	Harris		Digital Loci	LS7220	LSI Comp (3565)	
M51392	Mitsubishi			Video Switch with 8 dB Amplifier	NJM2223	NJR		Digital Lock	LS7225	LSI Comp (3565)	80
Video Amplifier (wideband : 70 MHz)	M51387A	Mitsubishi	10	Video Switch, 2-Input Single Unit	NJM2233B	NJR		LS7226	LSI Comp (3565)		
Video Amplifier (wideband : 100 MHz)	M51399	Mitsubishi		Video Switch, 3-Input	NJM2234	NJR (3594)		LS7228	LSI Comp (3565)		
Video Amplifier, 2-Channel Selectable (preamp in read chain of streaming tape drivers)	SG040	SiliconG		NJM2235	NJR			LS7229	LSI Comp (3565)		
Video Camera Auto-Iris Function	NJM2225	NJR		Video Switch, 3-Input (with 6 dB amplifier)	NJM2245	NJR		Dimmer Circuit (replaces electromechanical wall switches)	SLB0586A	Siemens	
NJM2225A	NJR			NJM2246	NJR			FDD Circuit, Two-Phase Stepping Motor Driver	KA6202	Samsung	85
Video Circuit, SIF Amp, IF Limiter, IF Detector, LED Driver, Mode SW, Matrix, VCO	KA22682	Samsung	15	Video Switch, 3-Input (with 75-ohm drivers)	NJM2243	NJR	50	FDD Read Amplifier (gain selector, peak detector and wave shape)	KA6201	Samsung	
Video Crosspoint Switch, 1x1	GX4301	Gennum		NJM2244	NJR (3594)			Frequency Synthesizer, 1.3 GHz (I ² C controlled)	TSA5511	Signetics	
Video Crosspoint Switch, 4x1	GX4104	Gennum		Video Sync Detector (for VCR, TV Video Camera)	NJM2220	NJR		Ground Fault Interrupter	GL7101	GoldStar	90
Video DAC, 8-Bit with ECL Inputs	MC10324	Motorola		NJM2230	NJR			LM1851	National		
Video DAC, 8-Bit with TTL Inputs	MC10322	Motorola		VIF and SIF System	KA2922	Samsung		RV4143	Raytheon		
Video DC-Restore Amplifier with 100 MHz Bandwidth	EL2090	Elahtec		KA2923	Samsung			RV4144	Raytheon		
Video Display Generator	MC6847	Motorola		Wideband Unity Gain Video Buffer	GB4600	Gennum (3496)	55	KA2803	Samsung		
Video IF	TDA4443	AEG Corp		Write/Read Amplifier for VTR	KA2944	Samsung		Infrared Preamplifier	TDA4065	Siemens	
Video IF Circuit	TDA4437	AEG Corp		SPDT RF Switch (break-before-make)	LH4266	National	20	Ionization Chamber Type Smoke Detector Circuit	SD3A	Supertex	
Video IF (high performance)	TDA4453	AEG Corp		Decade Counter/Divider	CD4083B	Harris		LED Printer Head Driver	LV8800	Sanyo	95
Video Modulator (interfaces audio, color, difference, and luminance signals to TV antenna terminals)	LM1889	National	25	Two Channel Video Multiplier	GT4123	Gennum (3496)	60	Light Dimmer Circuit, 3-Level with Delay-Off Mode	HI2418-3	Holt	
Video Multiplexer Module, 8x1 (HDTV quality)	GM8108	Gennum (3497)		4-Channel Processor	HA11882A	Hitachi		Light Dimmer Circuit, 4-Level with Delay-Off Mode	HI2418-4	Holt	
Video Multiplexer Module, 10x1 (HDTV quality)	GM8110	Gennum		32 Character On Screen Display	μPD6140	NEC		LINEAR - Consumer Circuits - Miscellaneous Battery Fast Charge Controller and Discharge Monitor	bq2001	o Benchmarq	
Video Multiplexer Module, 16x1 (broadcast quality)	GM8116	Gennum (3497)		40V FIP Driver	μPD6323A	NEC		LINEAR - Other Devices Battery Fast Charge Controller and Discharge Monitor	bq2001	o Benchmarq	
GM8216	Gennum			40V FIP Driver, 20 Outputs	μPD6300	NEC		Micro Power Receiver (up to 200 kHz bandpass)	DS1203S-B1	o Dallas	100
Video Multiplexer Module, 16x1 (CCTV quality)	GM8316	Gennum		8-mm Video A-D/D-A Converter	CXD1077	Sony	65	Modulator Oscillator, to 600 MHz	MC13024	Motorola	
GM8416	Gennum			Miscellaneous				Motor, Brushless DC Motor Commutator, 3 Phase	LS7262	LSI Comp (3564)	
Video Multiplexer (two channel with logic select line)	6158	OEI		Appliance Controller, D/A Converter	DAC1201	Burr-Brown		Motor, Brushless DC Motor Speed Controller, 4 Phase	LS7264	LSI Comp (3564)	
Video Multiplexer, 4x1 Wideband	AD9300	o AD (3331)		Capacitance Keyboard Encoder	UM82C01	UMC		Motor Controller, D/A Converter	DAC710	Burr-Brown (3418)	
Video Noise Reducer	NJM2210	NJR		Capacitive Touch Light Dimmer Circuit	HI2410	Holt		DAC711	Burr-Brown (3418)	105	
				HI2413	Holt			Motor Driver, for 3-Phase Brushless DC Motors	HA13406W	Hitachi	
				CD Motor Drive	KA9256	Samsung	70	Motor Speed Regulator	CS2917	Cherry Semi	
								Motor Speed Regulator and Driver for 3-Phase Brushless DC Motors	HA13426	Hitachi	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

o Available in Surface Mount Package

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LINEAR—Consumer Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Switches, Touch-Sensitive Light Dimmer (Cont'd)			
Music Chimes	SAB0600	Siemens		LS7234	LSI Comp (3564)		
	SAB0601	Siemens		LS7237	LSI Comp (3564)		
	SAB0602	Siemens					
Pager Circuit, POCSAG Decoder, Alphanumeric Output	STC5233N	STC		Tachometer Circuit			
				CS189	Cherry Semi	50	
Pager Circuit, POCSAG Decoder, Tone Output	STC5223N	STC	5	XR2917	Exar		
				LM2907	National		
Peak Power Meter Driver, Dual (for hi-fi stereo)	TA7318	Toshiba		LM2917	National		
	TA7332	Toshiba					
Phone Signal Processor				Touch Activated Light Dimmer Circuit			
LA8604M	♦ Sanyo			HI1220	Holt		
LA8630M	♦ Sanyo						
Photo-Electric Smoke Detector Circuit				Toy Radio Control Actuator		55	
SD2	Supertex		10	KA2303	Samsung		
Prescaler, 1 GHz (+64/256)	SAB6456	Signetics		KA2304	Samsung		
Programmable Encoder/Decoder				KA2309	Samsung		
UMK3751	UMC			KA2310	Samsung		
UM3750	UMC						
UM3752	UMC			Traffic Light Control Circuit			
UM3753	UMC			4004Z	NCM		
UM3754	UMC						
UM3755	UMC			Tuning Voltage Stabilizer, for use with Variable Capacitance Diodes		60	
Programmable Encoder/Decoder (Manchester phase encoding)				KA33V	Samsung		
ED10	♦ Supertex						
ED15	♦ Supertex			Universal Infrared Locking System (EEPROM 1K bit)			
Programmable Encoder (Manchester phase encoding)				SDE2506	Siemens		
ET15	♦ Supertex			Voltage Regulator with Watch-dog			
PROM, 30-Bit Field Programmable				LA5692	Sanyo		
CA414	Newbridge			VU Meter LED Driver			
Protector Circuit (overcurrent detection for OCL and speaker)	TA7317	Toshiba		KA2288	Samsung		
RC Toy Car Circuit, KA2311 Transmitter				Zero Voltage Switch			
KA2312	Samsung			KA2804	Samsung		
RC Toy Car Circuit, Three Function				2048x9-Bit CMOS Parallel FIFO		65	
KA2305A	Samsung			UM4503	UMC		
RC Toy Car Circuit, Three Function and Turbo							
KA2306A	Samsung		25	3 1/2 Digit Count Down/Up Timer			
RC Toy Car Circuit, Seven Function				UM3206	UMC		
KA2311	Samsung						
Remote Control Transmitter							
KS5803A/B	Samsung						
Smoke Detector							
SCL5331-5	Allegro Micro		30				
SCL5331-6	Allegro Micro						
SCL5332	Allegro Micro						
SCL5334	Allegro Micro						
SCL5341	Allegro Micro						
CS235	Cherry Semi						
MC14467	Motorola						
LM1801	National		35				
Smoke Detector, Photoelectric with I/O							
MC145010	Motorola						
Switch, Video and Audio							
TDA8440	Signetics						
Switches, DC-Controlled, Audio							
LM1037	National						
LM1038	National						
TDA1029	Signetics		40				
Switches, Proximity							
TDA0159	SGS-Thomson						
TDA0161	SGS-Thomson						
TDA0162	SGS-Thomson						
TCA305	Siemens						
Switches, Touch-Sensitive Light Dimmer							
LS7231	LSI Comp (3564)		45				
LS7232	LSI Comp						
LS7233	LSI Comp						

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Followers

Bias Current nA 25°C	Offset Voltage mV 25°C	Voltage Drift μV/°C	Unity Gain Bandwidth MHz min	Slew Rate V/μs	Output V @ mA	Supply Range, V	Comments	Device	Source	Line
0.1	5	100	100	100	9@100	± 5 to ± 20	Fast Follower	LH0033A/HR	† Maxim	5
0.25	1	100	100	100	9@100	± 5 to ± 20	Fast Follower	LH0033/HR	† Maxim	
0.5	5	25	140	1000	9@100	± 5 to ± 20	High Accuracy, Fast Follower	MAX460M	† Maxim	
	25	300 *	200 *	2000	10@200	± 5 to ± 20	Very Fast Follower	LH0063	† Maxim	
								LH0063	† National	
	50	300 *	200 *	2000	10@200	± 5 to ± 20	Very Fast Follower	LH0063C	Maxim	
								LH0063C	National	
1	1	3	100	200	± 12, ± 250	± 5 to ± 15	Fast High Power Closed Loop Buffer	EL2012C	Elantec	10
	10	25	140	1000	9@100	± 5 to ± 20	High Accuracy, Fast Follower	MAX460I	Maxim	
1.5	15000	33	275	2500	10@100	± 5 to ± 16	Gain = 0.99 (1k ohm)	OPA633A	† Burr-Brown (3410)	
								OPA633K	† Burr-Brown (3410)	
								OPA633S	† Burr-Brown (3410)	
2	1	7	70	2000	± 11, ± 100	± 5, ± 15	Low Quiescent Power, Audio/Video Buffer	EL2001	‡ Elantec	15
					± 11, ± 100	± 5, ± 15	Low Quiescent Power, Audio/Video Buffer	EL2001C	◊ Elantec	
4	3	6 *	20 *	30 *	10@1	± 5 to ± 18	Follower, Replaces 102	LM210	National	20
								SFC2210	SGS-Thomson	
		12 *	20 *	30 *	10@1	± 5 to ± 18	Dual 110 Follower	LH2110	† National	
							Follower, Replaces 102	LM110	‡ National	
5	0.1	100	100 *	1000	9@100	± 5 to ± 20	Fast follower	LH0033A	Maxim	25
	3	20	180	2000	± 11, ± 100	± 5 to ± 15	Fast Follower, Video Buffer	EL2002	‡ Elantec	
					± 11, ± 100	± 5 to ± 15	Fast Follower, Video Buffer	EL2002C	◊ Elantec	
	5	20	100	1200	± 10, ± 100	± 2.5 to ± 15	Fast Follower, Video Buffer	EL2003	‡ Elantec	
								EL2003C	Elantec	
	10	6 *	10 *	10 *	10@1.25	± 12 to ± 18	Follower	LM102	† National	30
	5000	25	125 *	1400	12@100	—	Fast Follower	HOS100A	AD	
								HOS100S	† AD	
5 *	25000		100	1200 *	± 12@105	± 2.5 to ± 18	Video line driver/Video buffer.	EL2033	† Elantec	35
6	0.4	90	55 *	220	10@22	± 6 to ± 18	Very Fast Follower	BUF03E	AD	
		100	55 *	220	10@21	± 6 to ± 18	Very Fast Follower	BUF03A	◊ AD	
7.5	7	10 *	20 *	30 *	10@1	± 5 to ± 18	Follower, Replaces 102	LM310	National	
10	0.1	25 *	100 *	1000	9@100	± 5 to ± 20	Fast Follower	ADLH0033	† AD	40
								ELH0033	† Elantec	
								LH0033	◊ † National	
								TP0033-HR	† TeledyneC	
		25*	100*	1000	9@100	± 5, ± 20	Fast Follower	CLH0033	TeledyneC	45
		100	100 *	1000	9@100	± 5 to ± 20	Fast Follower	LH0033	† Maxim	
	5	33	100	2500	± 10, ± 1A ± 10, ± 1A	± 5 to ± 15	Fast High Power Follower	EL2008C	Elantec	
								el2008c	Elantec	
			125	3000	± 10, ± 1A	± 5 to ± 15	Fast High Power Follower	EL2009C	Elantec	50
	5000	33	300*	1800	3.5@100	± 3 to ± 6		VA033	VTC	
15	0.25	100	100 *	1000	9@100	± 5 to ± 20	Fast follower	LH0033AC	Maxim	55
	0.7	150	50 *	180	10@25	± 6 to ± 18	Very Fast Follower	BUF03F	AD	
			170	50 *	180	± 6 to ± 18	Very Fast Follower	BUF03B	† AD	
	30	20 *	10 *	10 *	10@1.25	± 12 to ± 18	Follower	LM302	National	55
	35	33 *	250 *	1300	10@100	± 5 TO ± 20	Video Buffer	HA5033-5	◊ Harris	
	35000	33 *	250 *	1300*	10@100	± 5 TO ± 20	Video Buffer	HA5033-2	† Harris	
20	0.15	25 *	100 *	1000	9@100	± 5 to ± 20	Fast Follower	ADLH0033C	AD	55
								ELH0033C	Elantec	
								LH0033C	◊ National	
								TP0033	TeledyneC	
	0.5	100	100 *	1000	9@100	± 5 to ± 20	Fast Follower	LH0033C	Maxim	55
	30	100	25	1000	10@ ± 50	± 3 to ± 15	6 Identical Sections	MZ320	AnalogSys	
	7000	10 *	110	1300 *	10@100	± 5 to ± 22	Monolithic Buffer	HA5002-5	◊ Harris	
		30 *	110 *	1300*	10@100	± 5 to ± 22	Monolithic Buffer	HA5002-2	† Harris	
	20000	100	24 *	1500 *	10@100	± 6 to ± 18	Follower, Current Booster	AH0010C	OEI	55
								AH0010F	◊ OEI	
20.0	5	100	200	1000	10@500	± 11 to ± 18	Fast, High Current	9911	OEI	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Followers (Cont'd)

Bias Current nA 25°C	Offset Voltage mV 25°C	Voltage Drift µV/°C	Unity Gain Bandwidth MHz min	Slew Rate v/µs	Output V @ mA	Supply Range, V	Comments	Device	Source	Line
50	0.2 *	300 *	300 *	2000	10@200	± 5 to ± 20	Gain 0.094 (50 Ohm) Gain 0.92 (50 Ohm)	BB3553 3553	† Maxim † Burr-Brown (3410)	

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ♦ Available in Surface Mount Package
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LINEAR

LINEAR—Operational Amplifiers

mA V	Device	Source	Line	mA V	Device	Source	Line	Unity Gain Slew Rate (V/μs min)	Device	Source	Line
High Output Current				High Speed							
30000@68	PA03	Apex (3379)	5	200@10	μA759C μA759M	National † National	60	8000	CLC220AM	† Comlinear	95
20000@100	PA04	Apex (3379)		150@160	PA08	Apex (3378)		6000	CLC103AM	† Comlinear	
20000@80	OPA541S/883B	† Burr-Brown		130@13	ELH0041 ELH0041C LH0041 LH0041C	† Elantec Elantec ◊† National ◊ National		4000	WA01 CLC200AM	Apex (3378) † Comlinear	
15000@43	PA12A	† Apex (3379)		100@215	PA88	Apex (3378)		2000	AD844	AD (3335, 3338)	
10000@39	PA12 PA12M/883	Apex (3379) † Apex (3377, 3379)		100@15	CA3094	† Harris		1800	AD9618C AD9618M	AD (3335) † AD (3335)	
	PA61A	Apex (3379)		100@10	AD3554A AD3554S HOS060S 3554A	AD † AD † AD Burr-Brown (3410)		1600	AD9617C AD9617M	AD (3335) † AD (3335)	
10000@38	PA61 PA61M/883	Apex (3379) † Apex (3379)			3554B	Burr-Brown (3410)		1500	ADLH0033 HOS100S	† AD † AD	
10000@32	PA51A PA51M/883	† Apex (3379) † Apex (3377, 3379)			3554S	Burr-Brown (3410)		1400	ADLH0033C AD9615 HOS100A	AD AD AD	
10000@28	PA51	Apex (3379)			CLC200AM HA2542 LH0003 TP3554	† Comlinear Harris † National TeledyneC		1000 (dual device)	OP260	AD	
10000@26	OPA501S	† Burr-Brown (3411)		75@145	1480	TeledyneC		1000	AD3554 AD3554S PA85	AD † AD Apex (3378)	
10000@20	OPA501A	Burr-Brown (3411)	15	75@140	PA83 PA83M/883	Apex (3378) † Apex (3377)	75	1000 *	OPA603A	Burr-Brown (3410)	110
7000@75	HC2000H HC2500	Harris Harris		75@40	3583	Burr-Brown (3411)		1000	3554	Burr-Brown (3411)	
5000@45	PA07 PA07M/883	Apex (3379) † Apex (3377, 3379)		60@30	3580J	Burr-Brown (3411)			AM500C AM500M AM500MC HFA0001 AH9914 9914A	Datel Datel Datel Harris OEI OEI	
5000@44	PA10A	† Apex (3379)		50@10	AD380S AD382S AMP01 AM500M 9914A 1430	† AD † AD † AD Datel OEI TeledyneC		900	PA19	Apex (3378)	
5000@37	PA10 PA10M/883	Apex (3379) † Apex (3377, 3379)		47@14	LH0020 LH0020C	† National National		600	HA2539 HFA0005	◊ Harris Harris (3508)	
5000@22	PA73 PA73M/883	Apex (3379) † Apex (3379)		40@143	PA84	Apex (3378)		500	ADLH0032 ADLH0032C 1430 1430HR	† AD AD TeledyneC † TeledyneC	
5000@18	PA01	Apex		30@70	3581J	Burr-Brown (3411)		400	AD840 PA09 HA2540 LH0024	◊ AD (3335) Apex (3378) ◊ Harris † National	
5000@15	PA02 PA02M/883	Apex (3379) † Apex (3377, 3379)		25@10 *	HA2541	Harris		350 *	AD842	AD (3336)	
4000@35	PA19	Apex (3378)		10@35	OPA541B OPA541S	Burr-Brown (3411) † Burr-Brown (3411)		350	ELH0032 ELH0032C	† Elantec Elantec	
2500x2@18	PA21	Apex (3379)	20				80	350 *	HA2542	Harris	125
2000@100	PB50	Apex (3378)						350	LH0032C	◊ National	
2000@32	PA09 PA09M/883	Apex (3378) † Apex (3377)						300	AD848 AD849 HOS050 HOS050A HOS050C HOS060S ADS1435C AM1435C	AD (3335) AD (3335) † AD † AD AD † AD Datel (3442) Datel (3442)	
2000@22	LH0101 LH0101A LH0101AC LH0101C	Maxim † Maxim Maxim Maxim						250	AD841 AD843 3551J 3551S	AD (3336) AD (3336) Burr-Brown (3410) † Burr-Brown (3410)	
2000@20	3573	Burr-Brown (3411)							HA2541 LH0024C 1435	Harris National † TeledyneC	
2000@12	LH0021	† National						200	AD380S	† AD	
2000@11	ELH0101 ELH0101A ELH0101AC ELH0101C LH0101 LH0101A LH0101AC LH0101C	† Elantec † Elantec Elantec Elantec † National † National National National						160	HA5190 HA5195	◊ Harris Harris	
1500@139	PB58	Apex (3379)						135	HA2529	Harris	
1100@11	ELH0021	Elantec						120	HA2525	Harris	
1000@10	ELH0021C LH0021C	Elantec National	30				90				130
750@34	1461	TeledyneC									
500@10	LH0061 LH0061C	† National National									
200@215	PA85	Apex (3378)									
200@10	3553	† Burr-Brown (3410)									
	CLC103AM BB3553	† Comlinear † Maxim									
		(Continued)									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers (Cont'd)

Unity Gain Slew Rate (V/μs min)			Maximum Supply Voltage			Current pA 25°C		
Device	Source	Line	Device	Source	Line	Device	Source	Line
High Speed (Cont'd)			High Voltage			Low Bias Current		
100	AD509K AD509S 3550K	AD † AD Burr-Brown (3410)	1000/ ± 500	PA89 Apex (3378)	10	0.075	AD515A AD515L OPA104CM 3528C	AD AD Burr-Brown Burr-Brown (3341)
	HA2520 HA2544 HA5160 HA5162	♦† Harris Harris Harris (3508)	450/ ± 225	PA85 PA88 Apex Apex (3378) (3378)		0.1	OPA106W	† Burr-Brown
0.8	NE5234	Signetics (3678)	350/ ± 175	PA08V Apex (3378)		0.15	AD515K OPA104BM OPA106V 3528B	AD Burr-Brown † Burr-Brown Burr-Brown (3341)
± 45	MA700	AnalogSys	300/ ± 150	PA82J PA84M/883 PB58 Apex Apex Apex (3378) (3377) (3379)	15	0.2	ADOP07 HA5180	♦† AD Harris
			300	PA08 PA83 PA83M/883 PA84 Apex Apex Apex (3378) (3378) (3377) (3378)	20	0.3	AD515J OPA104AM OPA106U 3528A	AD Burr-Brown † Burr-Brown Burr-Brown (3342)
			200/ ± 100	PA04 PB50 Apex Apex (3379) (3378)	25	0.5	AD504M AD510L AD517L AD546 LH0044A LH0044AC	AD AD AD AD † National National (3338) (3342)
			150/ ± 75	PA81J Apex (3378)	30	1	AD545K AD545L AD545M AD645C AD645M OPA105 LH0052	AD AD AD AD † AD † Burr-Brown † National (3342) (3342) (3342) (3335, 3342) (3335, 3342)
			150	PA03 Apex (3379)	35	2	OPA103BM 3527B	Burr-Brown Burr-Brown
			100/ ± 50	PA07M/883 Apex	40	3	OPA103AM	Burr-Brown
			100	PA07 PA10A PA12A Apex † Apex † Apex (3379) (3379) (3379)	45	50	AD705C AD705M HA5160	AD † AD † Harris (3338, 3341) (3338, 3340)
			90/ ± 45	PA10M/883 Apex (3377, 3379) PA12M/883 Apex (3377, 3379) PA61 PA61M/883 Apex Apex (3379) (3379)	50	100	HA5170	♦† Harris
			90	PA10 PA12 Apex Apex (3379) (3379)	55			
			80/ ± 40	PA09 PA09M/883 PA19 Apex Apex Apex (3378) (3377) (3378)	60			
			80	PA51A PA51M/883 † Apex † Apex (3379) (3377, 3379)	65			
			72	PA51 Apex (3379)				
			60/ ± 30	PA73M/883 Apex				
			60	PA73 Apex (3379)				
			56/ ± 28	PA01 Apex				
			± 150	3582J 3583 3584 Burr-Brown Burr-Brown Burr-Brown (3411) (3411) (3411)				
			± 85	LB1013A AT&T				
			± 40	HA2640 HA2645 MC1536 LH0004 LH0004C LM143 LM144 LM1536 SG143 SG1536 SG343 1332 † Harris Harris † Motorola † National National † National † National † SiliconG ♦† SiliconG ♦ SiliconG TeledyneC				
			± 35	3580J Burr-Brown (3411)				
			± 34	MC1436 LM344 SG1436 Motorola National ♦ SiliconG				
			± 30	MC1436C LM343 Motorola National				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Operational Amplifiers (Cont'd)

Function	Device	Source	Line	Supply Current μA @ ±15V	Device	Source	Line	Unity Gain Bandwidth MHz	Device	Source	Line
Low Drift				Low Power				Wide Band			
0.2	RC4207 RC4227 RM4207 RM4227	Raytheon Raytheon † Raytheon † Raytheon		9	OP215B OP215C OP215F OP215G	♦† AD (3337, 3343) ♦† AD (3337, 3343) ♦ AD (3337, 3343) ♦ AD (3337, 3343)	60	1 GHz	HFA0002	Harris (3508)	
0.5	AD510L OP05A LT1002AC OP05A LH0044B	AD ‡ AD (3340) LinearTech † LinearTech National	5	15 20 30 45	ICL7711 LM4250 ICL8021C ICL8021M	Harris Harris Harris † Harris	65	40 *	AD380J AD380K AD380L AD380S	AD AD AD † AD	95
0.6	OP05E OP07A OPA27A OPA27E OPA37A OPA37E HA5127A HA5137A HA5147A LT1001AC LT1001AM LT1007AC LT1007AM LT1037AC LT1037AM OP05E OP07A OP27A OP27E OP37A OP37E μA714M LT1007AM LT1007M LT1037AM LT1037M OP37A OP37C	AD (3340) ♦‡ AD (3338, 3340) † Burr-Brown (3408, 3410) Burr-Brown (3408) † Burr-Brown (3408, 3410) Burr-Brown (3408, 3410) Harris Harris Harris LinearTech † LinearTech Linear									

LINEAR

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Operational Amplifiers (Cont'd)

Unity Gain Bandwidth MHz	Device	Source	Line
Wide Band (Cont'd)			
150 (-3db)	CLC103AM	† Comlinear	5
170	OPA620	Burr-Brown	
180	VN2018	Vanguard Semi	
200	9916	OEI	
200 (-3db)	CLC220AM	† Comlinear	
250	OPA621	Burr-Brown (3411)	10
300	9914A	OEI	
400	EHA2540	Elantec	
	HA2540	◊ Harris	
500 *	1435	† TeledyneC	
600	EHA2539	Elantec	15
	HA2539	◊ Harris	
1000	WA01	Apex (3378)	
	OPA600/883B	Burr-Brown (3411)	
3000	OPA675	Burr-Brown	
	OPA676	Burr-Brown	
150	LH4117	† National	
	LH4117C	National	

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value ° Behavioral Model Available ◊ Available in Surface Mount Package
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LINEAR

LINEAR—Operational Amplifiers—Characteristics

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units												
± 0.2	30000	5000		120 *		8 *	60			KA733	◊ Samsung	
± 0.25	0.01	0.03	± 10	0.4	400		90	1	High Voltage	PA85A	† Apex (3378)	
± 0.5	± 0.02 0.025	± 0.02 0.020	± 10 10	1	5 30	100 100	100 110	1	450 V Amplifier ± 50 to ± 600V supply 150 mA output.	PA88A	† Apex (3378)	
										PA89A	Apex (3378)	
± 1	12000			1	75				Power Booster Amp	PB58A	Apex (3378)	5
± 1.5	12000			1	50				High Voltage Power Booster Amp	PB58	Apex (3379)	
± 2	± 0.05 0.05	± 0.05 0.05 0.1	± 30 30 30	1 0.03	5 8 30	100 86 100	100 110	1 1	450 V Amplifier High Power ± 50 to ± 600V supply 150 mA output.	PA88 PA03	† Apex Apex (3378)	
										PA89	Apex (3378)	
± 4	± 0.05 0.05	0.1 0.1	± 10	0.4	400 15		90 90	1	High Voltage	PA85M PA88M	† Apex Apex (3378)	10
± 1750			-7000	1	50	6		1	± 30V to ± 100V supply, power booster, 2A out.	PB50	Apex (3378)	
0.001	0.004 *	0.002 *	0.03	1.9 *	2	1000	120	0	Precision Chopper-Stabilized	TLC2652AM	◊† TI	
	0.005	0.001	0.01	12	10		160	1	Precision, Autozero	MAX426C MAX426M	◊ Maxim † Maxim	15
	0.05	0.05	0.02	1	1		160	0		MAX425C MAX425M	Maxim ◊† Maxim	
0.003	0.004 *	0.002 *	0.03	1.9 *	2	1000	120	0	Precision Chopper-Stabilized	TLC2652M	◊† TI	
0.005	0.003	0.06	0.05	0.45 *	0.5 *	10000	120	0	Ultra Low Offset, ± 15V, Chopper Stabilized	MAX421C MAX421M	Maxim † Maxim	20
									Ultra Low Offset, ± 15V, Low Power Chopper Amp	MAX422C MAX422M MAX423C MAX423M	Maxim † Maxim Maxim † Maxim	
0.01	0.0005 0.005 0.008	0.05 0.01 0.05	2 2 *	2.5 2.5 *	10000 10000 10	120 120 120	0	0	Auto-Zeroed Chopper Stabilized Low-Cost, Low Power Chopper-Stabilizer OpAmp	TSC7650 ICL7650C	TeledyneC (3713) ◊ Maxim	25
	0.02	0.02 0.05	2 *	2.5 *	10000 5000	120 120	0	0	Chopper Stabilized	AM7650-2 ICL7650S ICL7650	Datel Harris ◊† Maxim	
0.015	0.5	0.2	1	4	1000	120	0	0	Auto-Zeroed Amplifier	TSC7650A	◊ TeledyneC (3713)	30
0.03	0.04 0.06	0.07 0.05	0.5 0.45 *	1 0.5 *	10000 1000 1000	1000 110	0	0	Low Noise, Chopper-Stabilized Chopper Stabilized	ICL7652S ICL7652 ICL7652	Harris Harris ◊ Maxim	
			1	3 *	1000	120	0	0	Low Noise, Chopper Stabilized	LTC1052C LTC1052M LTC7652C	LinearTech † LinearTech LinearTech	35
			0.1	0.5	0.5	1000	120	0	High Voltage Auto-Zeroed Amplifier	TSC9420 TSC9421	TeledyneC (3713) TeledyneC (3713)	
	10	0.05	.5	.5	1M	110	0	0		MAX420	◊† Maxim	
0.035	0.065	0.05	2.5	4	3000	120	0	0	Chopper Stabilized	LTC1050AC LTC1050AM	LinearTech † LinearTech	40
0.05	0.0005 *	0.05 0.05	0.7 * 2.5	0.2 * 4	1000 1000	110 110	0	0	Auto-Zeroed Chopper Stabilized	TSC900A LTC1050M	TeledyneC (3713) † LinearTech	
0.075	0.125	0.05	2.5	4	1000	110	0	0	Chopper Stabilized	LTC1050C	LinearTech	
0.1	0.15 0.2	0.05 0.05	0.4 0.125	1 0.125	1000 1000	120 120	2 0	0	Auto-Zeroed Ultra Low Offset Chopper with Capacitors.	TSC7652C MAX432C	TeledyneC (3713) Maxim	45
			0.5	0.5	1000	120	0	0	Ultra Low Offset Chopper with Capacitors.	MAX430C	Maxim	
0.01	0.02 0.05 *	0.04 0.03 *	0.1 0.05	2 * 1.9 *	2.5 * 1.5	5000 1000	120 110	0	Chopper Stabilized Low Noise, Chopper-Stabilized	ICL7650B TLC2654AM	◊† Maxim	
	0.1	0.1	0.1 0.3	0.5 0.5	0.5 0.5	1000 1000	120 120	2 0	Auto-Zeroed High Voltage Auto-Zeroed Amplifier	TSC915C TSC76HV52	TeledyneC (3713) TeledyneC	50
		0.2	0.05	0.125	0.125	1000	120	0	Ultra Low Offset Chopper with Capacitors.	MAX432E	Maxim	
				0.5	0.5	1000	120	0	Ultra Low Offset Chopper with Capacitors.	MAX430E	Maxim	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.01	1.2	0.3	0.1	0.6	0.3	12000	140	0	Low Cost Op Amp	OP177F	AD (3338)	(Cont'd)
	1.5	1	0.2	0.4	0.1	12000	130	0	Ultra-Precision Op Amp	OP177A	AD (3338, 3340)	
									Ultra-Precision Operational Amplifier	OP177E	AD (3338)	
	2	2	0.3	0.4	0.1	500	114	0	Ultra Low Offset, Low Drift.	MAX400M	† Maxim	
0.010	1.2	0.3	0.1	0.6	0.3	12000	140	0	Low Cost Op.Amp	OP177B	† AD (3338)	5
	2	1.5	0.3	0.4	0.1	2.5	120			RC4077A	± Raytheon	
0.015	0.03	0.06	0.1	0.45 *	0.5	5000	110	0	Chopper Stabilized	ICL7652B	± Maxim	10
	0.05		0.25	1	1.2	400	140			1701	TeledyneC (3713)	
		0.1	0.15	0.8	2	1000	120	0	Auto-Zeroed	TSC901C	TeledyneC	
	0.07	0.15		1.5 *	2.5 *	500	120	0	Auto-Zeroed	TSC911	TeledyneC (3713)	10
	0.08	0.0005 *	0.2	0.7 *	0.2 *	100	100	0	Auto-Zeroed	TSC900B	TeledyneC (3713)	
	1.2	0.3	0.1	0.9	0.3	8000	130	0	Ultra-Low Offset Voltage	AD707	AD (3338, 3340)	15
	2	2	0.3	0.4	0.1	500	114	0	Ultra Low Offset, Low Drift.	MAX400C	Maxim	
										MAX400E	Maxim	
			0.6	0.4	0.1	450	114	0	Ultra Low Offset, Low Drift	LT1001AM	† LinearTech	15
				0.8	0.25		126	0	Precision Amplifier	LT1001AM	† Maxim	
				2	0.1	0.45	114			LT1001	± Raytheon	
0.02	0.05 *	0.03 *	0.06	1.9 *	1.5	1000	105	0	Low Noise, Chopper-Stabilized	TLC2654M	± TI	20
	1.2	0.3	0.7	0.6	0.3	6000	140	0	Low Cost Op Amp	OP177G	AD (3338)	
0.025	0.02	0.1	0.6	0.9 *	0.05	200	108	0	Low Power.	OP97A	† AD (3338, 3340)	20
	0.2	0.1	0.6	0.9 *	0.05	200	108	0	Low Power.	OP97E	AD (3338, 3340)	
	1	0.25	0.5	0.25 *	0.1 *	1000	110	0	Ultra Low Offset Voltage, Low Drift	AD517L	AD (3338)	25
	1.2	0.3	0.1	0.6	0.3	12000	120	0	Ultra-Low Offset Voltage	OP77A	† AD (3338, 3340)	
	2	1.5	0.3	0.4	0.1	150	120		High Precision, High Gain	OP77	± Raytheon	25
		2	0.3	0.6	0.5	2000	120	2	Ultra Low Offset Voltage	HA5177A-2	† Harris	
										HA5177A-5	Harris	
			0.6	0.4	0.1	300	110	0	Ultra Low Offset, Low Drift	OP07A	± Maxim	30
						450	114	0	Ultra Low Offset, Low Drift	LT1001AC	LinearTech	
				0.5 *	0.1	150	110	0	Ultra Low Noise	OP07A	† Raytheon	30
				0.6 *	0.17 *	300	110	0	Ultra Low Offset Voltage, Low Drift	ADOP07A	± AD (3338, 3340)	
				0.8	0.25		126	0	Precision Amplifier	LT1001AC	± Maxim	35
				1.2 *	0.25 *	300	110	0	Ultra Low Offset Voltage, Low Drift	OP07A	± AD (3338, 3340)	
10	2.5	2	0.3 *	0.1 *	1000	110	0	Trimmed Offset	AD510L	AD	35	
15	2.5	0.5	0.4 *	0.06 *	1000	120	1	Precision, Low Noise	LH0044A	† National		
										LH0044AC	National	
35				5	2.5	7000		0	Low Noise, High Speed Precision Input	LT1007AC	± TI	40
				60	15	7			Low Noise, High Speed Bipolar	LT1037AC	TI	
40				8	2.8	1000		0	Low Noise, High Speed	OP27E	TI	40
				63	17	1			Low Noise, High Speed Bipolar	OP37E	TI	
	35	—	63 *	11 *	—	—	—	0	Low Noise, High Slew Rate	OP37A	† Raytheon	40
										OP37E	Raytheon	
			0.2	25 *	18 *	1000	—	0	Ultra Low Noise, Low Offset	ADOP37A	† AD (3335, 3338)	45
										ADOP37E	AD (3335, 3338)	
										OP37A	± AD (3335)	45
										OP37E	AD (3335)	
										OP37A	± TI	50
			0.6	5	1.7	600	114	0	Ultra Low Noise	OP27A	† Raytheon	
										OP27E	Raytheon	50
						1000	114	0	Ultra Low Noise	OP27A	± TI	50
				8 *	1.7	1000	114	0	Ultra Low Noise	OPA27A	† Burr-Brown (3408, 3410)	55
										OPA27E	Burr-Brown (3408)	
			8.5 *	10	1000	114	0	Ultra-Low Noise	HA5127A	± Harris	60	
			63	11	1000	114	0	Ultra Low Noise, Gain > 5	OPA37A	† Burr-Brown (3408, 3410)		
										OPA37E	Burr-Brown (3408, 3410)	60
			80 *	20 *	1000	114	1	Ultra-Low Noise	HA5137A	± Harris	60	
			120	28	1000	114	2	Ultra-Low Noise	HA5147A	± Harris		
40			90	40				0		VA711L	VTC	60
			500	150				0		VA721L	VTC	

† Mil Temp Range (−55° to 125°C)

± High Rad Resistance

*Typical Value

*Behavioral Model Available

± Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.03	10000	200	10	1000	250	31.6	80	1		1467 1467HR	TeledyneC † TeledyneC	
0.035	0.1 0.2	0.1 0.1	1.5 1.5	0.8* 0.9 *	0.1 0.2 *	300 300	114 114	0	Precision Low Drift Bipolar	LT1012C PM1012A	LinearTech † AD (3340)	
0.04	± 90 4 60 90	50 4 100 50	0.8 0.3 0.3 0.8	50 1 8 50	11 0.4 5 11	7000 2000 1000 30*	114 120 114 114	0	Ultra-low Noise High-speed Precision Fast Settling Low Noise Frequency Synthesizers	LT1028 LM607AC VA701K LT1028AC LT1028AM	◊† Maxim National VTC LinearTech † LinearTech	5
0.05	0.15 0.3 2	0.15 0.15 0.75	1.5 1.5 1	0.8* 0.9 * 0.25 *	0.1 0.2 * 0.1 *	200 200 1000	110 110 100	0	Precision Low Drift Bipolar Ultra Low Offset Voltage, Low Drift	LT1012M PM1012G AD517K AD517S	† LinearTech ◊ AD (3340) AD (3338) † AD (3338)	10
	5	0.5	0.3	0.57	3.5	10	125	0	Instrumentation Amplifier	AMP01A AMP01E	† AD (3345) AD (3345)	15
			0.5	0.2	—	2000	126	0	Precision Instrumentation	LM363A	† National	
	13	4	1	0.3 *	0.1 *	1000	110	0	Trimmed Offset	AD510K AD510S	AD † AD	
	15	0.5	1.3	0.7 *	0.25	1000	100	0	Single Supply	LT1006AC LT1006AM	LinearTech † LinearTech	20
		10	0.5	—	5	1000	90	0	Precision Instrumentation	AD524C	AD (3345)	
	20	20	0.6	1	3	3000	120			LM627AC LM637AC	National National	
	30	— 5	0.2 0.5 1	0.25 0.4 * 0.4 *	5 0.06 * 0.06 *	1 500 500	115 114 114	0 1 1	Precision Instrumentation Precision, Low Noise Precision, Low Noise	AD624C LH0044B LH0044	AD (3345) National † National	25
0.055	20	20	0.3	1	3	3000	120			LM627AM LM637AM	† National † National	
0.06	4	3.8	1	0.4	0.1	400	110	0	Low Offset Voltage	LT1001C LT1001M	LinearTech † LinearTech	30
	8 55	4	1.3	0.4 5 60	0.1 2.5 15	200 5000 5	106	0	Low Noise, High Speed Precision Input Low Noise, High Speed Bipolar	OP-07A LT1007C LT1037C	† National TI TI	
	50	1.3	5	1.7	1000	106	0	Ultra Low Noise	ADOP27B ADOP27F OP27B OP27F OPA27B OPA27F OP27B OP27F	† AD (3335, 3338) AD (3335, 3338) ◊† AD (3335, 3338) AD (3335, 3338) † Burr-Brown (3408, 3410) Burr-Brown (3408, 3410) † Raytheon Raytheon	35 40	
				45	11	1000	106	0	Ultra Low Noise, Gain >5	ADOP37B ADOP37F OP37B OP37F OPA37B OPA37F	† AD (3335, 3338) AD (3335, 3338) ◊† AD (3335) AD (3335) † Burr-Brown (3408, 3410) Burr-Brown (3408, 3410)	45
				25		100	106	1	Very Low Noise	OP47A OP47F	Raytheon Raytheon	
						500	106	1	Very Low Noise	OP47B OP47C	† Raytheon † Raytheon	50
				63 *	11	1000	106	0	Ultra Low Noise, Gain >5	OP37B OP37F	† Raytheon Raytheon	
0.060	4	3.8	1	0.8	0.25		126	0	Precision Amplifier	LT1001C LT1001M	◊ Maxim † Maxim	55
	6	6	0.6	0.6	0.5	1000	110	1	Ultra Low Offset Voltage	HA5177-5	Harris	
0.070	0.1	0.0005 *	0.8	0.7 *	0.2 *	100	98	0	Auto-Zeroed	TSC918	TeledyneC (3713)	
0.075	0.3 3	0.15 2.8	1.5 1.3	0.9* 0.4 0.6 * 1.2 *	0.05 0.1 0.17 * 0.25 *	150 200 200 200	108 110 110 110	0 0 0 0	Low Power. Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift	OP97F OP07 ADOP07 OP07 μA714M	AD (3338, 3340) † LinearTech ◊† AD ◊† Maxim † National	60
(Continued)												

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.075										(Cont'd)		
	4	3.8	0.2 1.3	0.4 0.4 0.6 *	0.2 0.1 0.17 *	150 200 200	106 110 123 *	0 0 0	Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift	OP07E OP07E ADOP07E OP07E OP07E μA714EC	TI LinearTech AD (3338, 3340) AD (3338) Maxim National	5
	75	3 60	2	46 45	450 17			0	Very High-Speed Transimpedance Audio Op-Amp	AD846 MA362C MA362M	AD (3335, 3338) AnalogSys AnalogSys	10
	200		1	60	2000			0	60 MHz, 2000 V/μs	AD844	AD (3335, 3338)	10
0.08	0.05 4 15	0.01 4 0.5	1.5 0.3 1.5	1 * 1 0.1 *	0.3 * 0.4 —	500 2000 1000	114 120 105	0 0 0	Improved LM11 Precision, Low Power	LM11A LM607AM OP20B	↑ National ↑ National ↑ AD (3337, 3339, 3341)	15
	25	0.9	1.3	0.7 *	0.25	70	97	0	Single Supply	LT1006C LT1006M	LinearTech ↑ LinearTech	15
	180	100	1.0	50	11	30*	110		Low Noise Frequency Synthesizers	LT1028C LT1028M LT1028M	LinearTech ↑ LinearTech ↑ TI	20
0.09	6	5.6	0.6	1	0.4	1500	112			LM607BC	National	20
0.1	0.0008 0.005 2 3	0.0015 0.05 0.4 2	5 25 0.5 1.5	2 1.5 0.5 1.2 *	5 7 0.3 0.25 *	500 100 1000 500	110 60 90 90	0 1 0 0	High Precision Ultra Low Offset Voltage	SP111 1009 1018 MAX480C OP207A OP207B	↑ Sipex-HSD TeledyneC TeledyneC Maxim ↑ AD (3338, 3343) AD (3338, 3343)	25
	5pA	5pA	0.8	16 *	40	200	106	0	Fast settling, Low noise Fastsettling, Low noise	OPA627SM OPA627	↑ Burr-Brown (3408, 3410) Burr-Brown	30
	6 15	2 3	1 1	0.57 * 0.57	3 3	10 10	115 110	0 0	Instrumentation Amplifier Instrumentation Amplifier	AMP01G AMP01B AMP01F	AD (3345) AD (3345) AD (3345)	30
	20 25 35 40	15 5 5 40	0.5 3 1 10	— 3 * 0.4 * 90 500	5 0.1 * 0.06 * 40 150	1000 250 500	90 94 114	0 0 1 0 0	Precision Instrumentation Trimmed Offset Precision, Low Noise	AD524B AD510J LH0044C VA711K VA721K	AD (3345) AD National VTC VTC	35
	50	— 3	0.5 2	0.25 0.5	5 0.7	1	110 85	0	Precision Instrumentation	AD624B TLE2021BC TLE2021BI	AD (3345) TI TI	40
		5	2 *	2 *	0.7	1000	100	0	Low Power Precision	TLE2021BM	↑ TI	40
		35	0.5	—	5	1000	90	0	Precision Instrumentation	AD524S	↑ AD (3345)	40
	70 80	1	0.8	— 8 63	0.01 2.8 17	100 700 700	120 700 700	4 0 0	High-Gain Instrumentation Low Noise, High Speed Low Noise, High Speed Bipolar	OP06A OP27G OP37G	AD TI TI	45
	75	—	63 *	11 *	—	—	—	0	Low Noise, High Slew Rate	OP37C OP37G	↑ Raytheon Raytheon	45
		0.4 *	8 *	3.2 *	1200 *	120	120	0	Ultra Low Noise	ADOP27C	↑ AD (3335, 3338)	50
					1200	120	120	0	Ultra Low Noise	ADOP27G	AD (3335, 3338)	50
					1200 *	120	120	0	Ultra Low Noise	OP27C	AD (3335, 3338)	50
										OP27C	TI	50
		25 *	18 *	700	120	0	120	0	Ultra Low Noise	ADOP37C	↑ AD (3335, 3338)	50
										ADOP37G	AD (3335, 3338)	50
										OP37C	AD (3335)	50
										OP37G	AD (3335)	50
		1.8	5	1.7	700	100	0	0	Ultra Low Noise	OP27C OP27G OP27C OP27G	↑ LinearTech LinearTech ↑ Raytheon Raytheon	55
					7	1000	100	0	Ultra-Low Noise	HA5127	↑ Harris	55
		45	11	700	100	0	100	0	Ultra Low Noise	OPA37C	↑ Burr-Brown (3408, 3410)	60
										OPA37G	Burr-Brown (3408, 3410)	60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.1	80	75	1.8	45	11	700	100	0	Ultra Low Noise. Ultra Low Noise, Gain >5	OP37G OP37C OP37G	Maxim † LinearTech LinearTech	5
					25	450	100	1	Very Low Noise	OP47E OP47G	Raytheon Raytheon	
				60 120	14 28	1000 700	100 100	1 2	Ultra-Low Noise Precision, High Slew	HA5137 HA5147	† Harris † Harris	
100 150	— 15	1 0.5	0.25 0.6 *	5 0.25	1 0.25	1 2000	100 110	0 0	Precision Instrumentation Precision, Low Power	AD624S OP21B OP21F	† AD (3345) † AD (3337, 3341) AD (3337, 3341)	
0.11	20	20	0.6	1	3	2000	120			LM627BM LM637BM	† National † National	10
			1	1	3	3000	120			LM627BC LM637BC	National National	
0.12	0.1	0.1	1.5	1*	0.1	200	114	1	Precision Low Drift Bipolar	LT1008C LT1008M LT1008M	LinearTech † LinearTech † TI	15
	0.3	0.15	1.5	0.5 *	0.1	2 *	114	0	Low Power	PM1008A PM1008G	† AD (3339, 3341) AD (3338, 3340)	20
6 25	5.6 15	0.6 2	1 0.25	0.4 0.5	1500 1000	112 110	1		Precision, Low Drift	LM607BM 3510V	† National † Burr-Brown	
0.13	11 12	5.3 6	1.3 0.2	0.4 0.4	0.1 0.2	180 100	103 110	0	Low Offset Voltage	OP-07E OP07D	National TI	25
0.14 *	0.000075 *	0.000030 *	5	1.0 *	3.0 *	700	118 *	0	FET Electrometer	OPA128L	Burr-Brown (3408)	
	0.00015	0.000030 *	10	1.0 *	3.0 *		118 *	0	FET Electrometer	OPA128K OPA128S	Burr-Brown † Burr-Brown (3408)	
0.14	150	150	1	8	5	700	100		Fast Settling	VA701J	VTC	30
0.15	0.05	0.01	4.0	6.5 *	10	150	86		High Speed Instrumentation Amplifier	LT1055AC LT1055AM	LinearTech † LinearTech	
		0.010	4.0	6.5 *	12	150	86		High Speed Instrumentation Amplifier	LT1056AC LT1056AM	LinearTech † LinearTech	
0.075 2	0.01 0.2	0.7 * 2.5	1 * 0.8 *	0.3 * 0.12 *	500 80	114 104	0 0		Improved LM11 Improved 108 A, Low Bias, Compensated	LM11AC OP12A OP12E	National † AD AD	35
							1		Improved 108 A, Low Bias	OP08A OP08E	† AD AD	
	2	0.9	1.2 *	0.25 *	300	114	0		Instrumentation	OP05A	† AD (3340)	
2.8 5	2.8 1	1.2 3	0.4 0.25 *	0.1 0.1 *	2000 1000	100 94	0 0		Ultra-Low Offset Ultra Low Offset Voltage, Low Drift High Precision	OP77G AD517J MAX480E	† AD (3338, 3340) AD Maxim	40
7	6	0.2 1.8	0.4 0.4	0.2 0.1	100 120	100 100	0 0		Ultra-Low Offset Voltage Ultra-Low Offset Low Offset Voltage, Low Drift	OP07C OP07C OP07C	TI † AD (3338, 3340) LinearTech	
				0.5 * 0.6 * 1.2 *	0.1 0.17 * 0.25 *	100 120 120	100 100 0		Ultra Low Noise Ultra Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift	OP07C ADOP07C OP07C	Raytheon † AD (3338, 3340) † Maxim	
10	1.0				0.08	2000	110			OP90A OP90E	† AD (3337, 3341) AD (3337, 3341)	50
12	6	2.5	0.5 * 0.6 * 1.2 *	0.1 0.17 * 0.25 *	100 120 120	94 94 94	0 0 0		Ultra Low Noise Ultra Low Offset Voltage, Low Drift Low Offset Voltage, Low Drift Ultra Low Offset, Low Drift	OP07D ADOP07D OP07D OP07D	Raytheon † AD (3338, 3340) † Maxim † AD (3338, 3340)	
100	4	1	0.6	0.25 *	1000	100	0		High Speed, Low Power	OP21A OP21E	AD (3337, 3341) AD (3337, 3341)	
250	120	3	100	900	140	95	1		Fast Settling	EL2029 EL2029C	† Elantec Elantec	55
0.16	8 95	7.6 85			0.1 0.7	200 2000	106 104	0 0	200°C Operation 200°C Operation	LT1001X LT1007X	† LinearTech † LinearTech	60
0.2	0.001 *	0.0005 *	0.5 *	1.9 *	2	90	90	0	Low Noise, Precision	TLC2201AM	† TI	
	7	2	1.5		5	225	85		High Precision	MAX480M	† Maxim	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.2	7	6	0.7 *	1.2 *	0.25 *	400	—	0	Ultra Low Offset Voltage	OP207E OP207F	AD (3338, 3343) AD (3338, 3343)	(Cont'd)
10	3	3	0.2 *	—	—	1000	114	0	Precision Instrumentation	LM363	National	5
12	5.6	1.3	0.4	0.1	0.1	150	106	0	Precision Instrumentation	OP-07	† National	
15	15	2	0.3 *	0.1 *	0.1 *	1-1000	80	0	Instrumentation	AD522B	AD (3345)	
20	5	3	1.2 *	0.25	0.25	300	110	0	Precision, Instrumentation	CA3193A	Harris	
				0.25 *	0.25 *	1000	120	0	Precision Instrumentation	CA3493A	† Harris	
25	2.5	5	0.1 *	—	—	400	100	0	Precision, Low Power	OP20C OP20G	† AD (3337, 3339, 3341) AD (3337, 3339, 3341)	10
	20	6	0.3 *	0.1 *	—	1-1000	75	0	Instrumentation	AD522S	† AD (3345)	10
50	3	2	0.5	0.7	—	—	85	—	—	TLE2021AC TLE2021AI	TI TI	
	5	2 *	2 *	0.7	—	1000	100	0	Low Power Precision	TLE2021AM	† TI	
200	20	0.5	0.6 *	0.25	—	1500	105 *	0	Precision, Low Power	OP21G	AD (3337, 3341)	
0.21	50	50	1.8	1	3	2500	116	—	—	LM627C LM637C	National National	15
0.25	.020	.01	2.00	.12	.04	108	90	0	Low Power, Precision	HA7713A	◊ Harris	20
		0.15		0.35	18	128	85	0	Programmable Gain Instrumentation Amp	AD526 AD549C	† AD (3345) AD (3342)	
	0.000075	5	1	3 *	—	—	—	—	FET-Input Electrometer	OPA106W	† Burr-Brown	20
	0.0001	0.00004	5	1 *	1.2	150	76	0	Ultra Low Bias Military	3528B	Burr-Brown	
	0.00015	0.00004	5	0.7	0.7	—	80	—	Ultra Low Bias FET	OPA106V	† Burr-Brown	
		0.00008	10	1 *	1.2	150	76	0	Low Bias Military			
	0.0003	0.00008	50	1 *	1.2	150	76	0	Low Bias Military	OPA106U	† Burr-Brown	25
	0.001	.0002	2	1	0.9	200	76	0		OPA105WM/883B	† Burr-Brown	
		0.0002	2	1 *	0.9	100	76	0	Low Bias, FET Input	OPA105W	† Burr-Brown	25
						200	76	0	Low Drift, Low Bias FET	OPA103DM	Burr-Brown	
			5	1 *	0.9	100	76	0	Low Bias, FET Input	OPA105V	† Burr-Brown	30
						200	76	0	Low Drift, Low Bias FET	OPA103CM	Burr-Brown	
			25	1 *	0.9	100	76	1	Low Bias, FET Input	OPA105UM	† Burr-Brown	
	0.00025	1	2	1	—	100	1	1	Low Noise, Dielectrically Isolated	OPA111B	Burr-Brown	30
											(3408)	
	0.0005	3	0.7 *	0.3	40	76	0	0	Precision, Low Drift FET	AD545M	AD (3342)	30
	0.001	2	5	28	40	92	0	0	High-speed precision Di-FET	OPA602C	Burr-Brown	
	0.002	0.0003 *	5	1 *	0.6	100	76 *	0	Low Drift FET	3527B	Burr-Brown	35
	0.005	0.0003 *	2	1 *	0.6	100	76 *	0	Ultra Low Drift FET	3527C	Burr-Brown	
		0.001	8	2.4 *	5	100	95		Low Bias Current	OP43E	AD (3339, 3341)	
	0.01	0.004	5 *	10 *	5	50	80	0	Low Noise, Wideband JFET	OPA101BM	Burr-Brown	35
					10	50	80	0	Low Noise, Wideband JFET	OPA102BM	Burr-Brown	
	0.010		2	1	1.8 *	86			Precision Low-Power BiFET	AD548	AD	40
	0.025	0.002	1	1	3	250	80	2	Ultra Low Drift BiFET	AD547L	AD (3342)	
		0.010	3			200			High-Speed BiFET	AD711C	AD (3337, 3340, 3342)	
	0.03	0.03	3	200	75	250	90	0	BiFET, 500 ms settling time	AD744	† AD (3336)	40
	0.05	0.01	5	8 *	23	150	86	0	Wideband, Low-Drift JFET	LT1022AC LT1022AM	† LinearTech † LinearTech	
	0.5	25	5	12.8	100	250	110	0	JFET Input, Bipolar	AD845	† AD (3336)	45
	1.5	0.005	2	1	1	300	86		Precision Low Power BiFET	AD548C	AD (3339, 3341)	
	14	10	2.5	1	0.4	1000	108			LM607C	National	45
	18	8	1.8	0.4	0.1	100	97			OP-07C	National	
	20	2.5		0.08	1000	104				OP90F	AD (3337, 3341)	50
	28	8	2.5	0.4	0.1	100	94			OP-07D	National	
	50	2		100			104			OPA637	◊ Burr-Brown	50
											(3408, 3410)	
		7	1.5	6					Programmable gain = 1,10,100	PGA102S	† Burr-Brown	50
									Programmable gains = 1,10,100	PGA102B	Burr-Brown	
	0.005	5	5 *	30 *	60	80	—		High Speed, Low Drift FET	AD381L	AD	(Continued)
	35	0.5	—	5	1000	90	0		Precision Instrumentation	AD524A	AD (3345)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Band- width MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
0.25	80	75	1.8	5	1.7	700	100	0	Ultra Low Noise, Gain >5	OPA27C OPA27G	† Burr-Brown (3408, 3410) Burr-Brown (3408, 3410)	(Cont'd)
	100	—	1	0.25	5	1	100	0	Precision Instrumentation	AD624A	AD	5
	150	80	1	80	4.5	4562	115	0	Low Noise, Voltage Precision	MAX412	† Maxim	
	250	120	3	50	700	80	95	0	Fast Settling	EL2028 EL2028C	† Eiantec Eiantec	
	500		0.25	190						AD9615	AD	
0.250	0.02	0.01	2.00	1	.45	108	90	0	Low Power, Precision	HA7712A	◊ Harris	
0.26 *	0.000150 *	0.000065 *	20	1.0 *	3.0 *	700	118 *	0	FET Electrometer	OPA128J	Burr-Brown (3408)	
0.3	0.05	0.01	1 *	1 *	0.3	100	110	0	Improved 108 A, Low Power	LM11	† National	10
	0.1	0.03	5	4	5	300	100	0	Precision JFET Input	HA5170-2	† Harris	
		0.06	5	4	5	300	100	0	Precision JFET Input	HA5170-5	Harris	
2	0.2	3.5	0.8 *	0.12 *	80	104	0	Improved 108 A, Low Power, Compensated	OP12B OP12F	‡ AD AD		
	5	1	1.5	—	0.7 *	1000	100	0	Programmable Micropower	OP32E	AD (3337, 3339, 3341)	15
				0.25	0.08	400	82	0	Programmable Micropower	OP22A	AD (3337, 3339, 3341)	
							88	0	Programmable Micropower	OP22E	AD (3337, 3339, 3341)	
			2	—	0.7 *	1000	100	0	Programmable Micropower	OP32A	† AD (3337, 3339, 3341)	
	25	2	5	0.1 *	—	500	90	0	Precision, Low Power	OP20H	◊ AD (3337, 3339, 3341)	
0.3 *	30	0.3 *		0.5 *	0.2 *	70				TA75254	Toshiba	20
0.3	50	50	7	150	120	1000	80		Closed Loop Gain >5	HA2548	† Harris (3508)	
	3500	100	5	400	400	400	110	0	Wideband, Fast Settling	AD840	† AD (3335)	
0.4	0.05	0.02	8.0	5.5 *	7.5	120	83		High Speed Instrumentation Amplifier	LT1055C LT1055M	LinearTech † LinearTech	25
					9.0	120	83		High Speed Instrumentation Amplifier	LT1056C LT1056M	LinearTech † LinearTech	
0.4 *	0.075		25	0.35 *	1.0 *	25	70	0	FET Electrometer	AD515L	Burr-Brown (3408)	
	0.15		15	0.35 *	1.0 *	40	80	0	FET Electrometer	AD515K	Burr-Brown (3408)	
	0.3		50	0.35 *	1.0 *	15	94 *	0	FET Electrometer	AD515J	Burr-Brown (3408)	
0.4	25	20	6	0.3 *	0.1 *	1-1000	75	0	Instrumentation	AD522A	AD (3345)	30
0.5		2000	4 *	100				0	Wideband, Fast Settling	AD9610B AD9610T	AD (3335) † AD (3335)	
	0.000075	0.00002	10	0.5 *	0.3	—	70	—	Ultra Low Bias FET	3528C	Burr-Brown	35
		0.00004	10	1 *	1.6 *	100	80	0	Ultra Low Bias FET	OPA104CM	Burr-Brown	
	0.00015	.0003	10	0.5	1	300	90			OPA128SM/883B	† Burr-Brown (3408)	
		0.00008	15	1 *	1.6 *	100	66	0	Ultra Low Bias FET	OPA104BM	Burr-Brown	
	0.0003	0.00008	10	0.5 *	0.3	—	66	—	Ultra Low Bias FET	3528A	Burr-Brown	40
	0.001	0.0001	5	1 *	1.5	100	80	0	Precision FET	LH0052	† National	
	0.001 *	0.0005 *	0.5 *	1.9 *	2	90	90	0	Low Noise, Precision	TLC2201M	† TI	
	0.001	0.002 *	15	1 *	0.9	200	76	0	Low Drift, Low Bias FET	OPA103BM	Burr-Brown	
	0.002	.002	5	4	24	25	88			OPA602SM/883B	† Burr-Brown (3408, 3410)	
										OPA111M/883B	† Burr-Brown (3408)	
	0.001		10	2	1			0		OPA111A	Burr-Brown (3408)	
	0.0015		5	2	1	560	90	1	Low Noise, Dielectrically Isolated	OPA111S	† Burr-Brown (3408)	
	0.002		5	4	24	25	88	0	High-speed precision Di-FET	OPA602B OPA602S	Burr-Brown (3408, 3410) † Burr-Brown (3408, 3410)	45
(Continued)												

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
0.5	0.002										(Cont'd)		
		0.003 *	25	1 *	0.9	200	76	0	Low Drift, Low Bias FET	OPA103AM	Burr-Brown		
	0.003 *	0.001 *	6 *	0.4	10 *	15	65			TLE2061BC	TI		
										TLE2061BI	TI		
										TLE2161BC	TI		
										TLE2161BI	TI	5	
	0.004 *	0.002 *	6 *	2 *	2	30	72	0	J-FET Low Power, High Drive	TLE2061BM	† TI		
								1	J-FET Low Power, High Drive	TLE2161BM	† TI		
	0.005	0.001	5	0.5 *	1	1000	100	0	J-FET	OP41A	† AD (3339, 3341)		
				2.4 *	5	100	95		Low Bias Current	OP43A	† AD (3339, 3341)		
				8	0.5 *	1	1000	100	0	J-FET	OP41E	AD (3339, 3341)	10
0.5 *	0.005	0.004	10	2 *	2 *	320	86	0	Dielectrically Isolated FET, Low Noise	OPA121K	Burr-Brown		
											(3409)		
0.5	0.005	0.025	10	2 *	8	500	80	0	Ion Implanted FET	AD611K	AD		
	0.01		10		12	200	70	1	Ultra-low Power CMOS	MAX406	† Maxim		
		0.01	10		20	800	96	0	to ± 150V supply, 150mA output	PA08A	Apex (3378)		
				1.3 *	3.5	100	120 *	0	to ± 50V supply, 5A output	PA07A	Apex	15	
				5	12	30	74	0	to ± 75 V supply, 30 A output	PA03A	Apex (3379)		
	0.015	0.006	10	10 *	5	50	80	0	Low Noise, Wideband JFET	OPA101AM	Burr-Brown		
					10	50	80	0	Low Noise, Wideband JFET	OPA102AM	Burr-Brown		
											(3408, 3410)		
	0.02	0.01	10		100 *		104 *	2	to ± 50V supply, 4A output	PA09A	Apex (3378)		
				150	75	31	104	2	Video Amp	1449	† TeledyneC		
				150 *	600	150 *	100 *	1	± 40 V supply, 4 A output	PA19A	Apex (3378)	20	
0.025	0.002		2	1	3	250	80	2	Ultra Low Drift BIFET	AD547K	AD (3339, 3342)		
			5	1	3	250	80	2	Ultra Low Drift BIFET	AD547S	AD (3339, 3342)		
				2	17 *	50	80	0	High Speed Precision Bipolar JFET	AD544L	AD (3340)		
			10	5 *	30 *	40	80	1	High Speed, Low Drift FET	AD382K	AD		
						60	80	—	High Speed, Low Drift FET	AD381K	AD	25	
	0.01		5	1 *	3	200	80	0	Precision Bipolar JFET	AD542L	AD (3340)		
0.035	0.002		5	20	94 *	60 *	80	1	Wideband, Fast Settling	OPA605C	Burr-Brown		
										OPA605K	Burr-Brown		
0.05	0.01		5		45	100	86	—	Wideband, Decompensated, Settles to 0.01% in 1.5 μs	OP17A	‡ AD (3336, 3342)		
										OP17E	AD (3337, 3342)	30	
				14 *	10	35	85	0	Bias Compensated Bipolar-JFET	OP15E	LinearTech		
						100	86	0	Bipolar-JFET, Bias Comp.	OP15A	† LinearTech		
										OP15A	‡ AD (3337, 3342)		
										OP15E	AD (3337, 3342)	35	
				19 *	18	35	85	0	Wideband-JFET, Bias Comp.	OP16A	† LinearTech		
						100	86	0	Wideband-JFET, Bias Comp.	OP16E	LinearTech		
										OP16A	‡ AD (3337, 3342)		
										OP16E	AD (3337, 3342)		
	0.025		10	1	1	50	80	0	Low Power BIFET	LF441A	National		
				3	10	50	80	0	Wideband JFET	LF411A	National		
				3.4	18	200	80		Precision High Speed BiFET	AD711B	AD (3337, 3340, 3342)		
										AD711K	AD (3337, 3340, 3342)		
										AD711T	† AD (3337, 3340, 3342)	40	
0.1	—		50	15 *	150 *	100	90	1	High Speed, High Power	1461HR	† TeledyneC		
0.10	0.02		5 *	2.5 *	5 *	50	85	0	Bipolar—JFET	PM155	† AD		
0.2	0.1		10 *	3	13	50	80	0	BiFET, Low Offset	TL087I	TI		
				8 *	30 *	50	—	0		MC34081A	Motorola		
										MC35081A	† Motorola		
				16 *	55 *	50	—	—	Decompensated	MC34080A	Motorola		
										MC35080A	† Motorola	50	
0.25	0.1		3	4.5	2.8	1000	110		Ultralow Noise BiFET	AD743	AD (3335)		
0.4	0.05		10 *	3 *	13 *	25	70	0	Low Offset JFET	TL087C	TI		
1	0.5		1	130	1000	10			Ultra-Fast OpAmp	AM500M	Datel		
	1			100	35	150	100	0		2600	Sipex-HSD		
										2620	Sipex-HSD		
										2622	Sipex-HSD		
										2625	Sipex-HSD		
(Continued)													

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

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LINEAR—Operational Amplifiers—Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
0.5	1.5	0.005	5	1	1	300	82		Precision Low Power BiFET	AD548B AD548K AD548T	AD (3339, 3341) AD (3339, 3341) † AD (3340, 3342)	
	2	0.2	5	1 *	0.3 *	80	96	1	Precision Bipolar, Low Bias	AD208A PM108A LM108A LM108A LM108AFRH LM208A LM108A LM208A LM108A	AD (3345) ‡ AD † LinearTech ‡ National ‡ National National † SGS-Thomson SGS-Thomson † TI	5 10
			1	5	220			0	Wideband, Fast-Settling	AD9611	AD	
3	2.8	2	0.6	0.25 *	200	110	0		Instrumentation	OP05	‡ AD	
4	3.8	2	0.6	0.25 *	200	107	0		Instrumentation	OP05E	AD (3340)	15
5μA	1μA	20	1.1 GHz	1000	15	90	1		Wideband	EL2038 EL2038C	‡ Elantec Elantec	
				400	400	15	90	1	Wideband	EL2039 EL2039C	‡ Elantec Elantec	
7	1	5		1 *	0.3 *	80	96	1	Precision Bipolar	LM308A AD308A LM308A LM308A LM308A LM308A	TI AD LinearTech Motorola National SGS-Thomson	20 25
7.5	2	2	—	0.7 *	750	95	0		Programmable Micropower	OP32B OP32F	‡ AD (3337, 3339) AD (3337, 3339, 3341)	
			0.25	0.08	250	80	0		Programmable Micropower	OP22B	AD (3337, 3339, 3341)	
						85	0		Programmable Micropower	OP22F	AD (3337, 3339, 3341)	
10		3	150 175	800 800	2 2	65 65	0 0		14-Bit Settling with Clamping 14-Bit Settling	CLC502 CLC402	‡ Comlinear ‡ Comlinear	30
26	2.5 5	1 10	1 16	27 27	100 100	80 90	0 0			LF400AM LF400AC	† National National	
30	5	5	1 *	0.25 *	80	90	1		High Accuracy 301	AD301AL	AD	
35	2	8	0.8	0.25	100	90	0		General Purpose	OP02A	‡ AD (3340)	35
40	10	5	1.2 *	0.25 *	100	100	0		Precision, Instrumentation	CA3193 CA3493	Harris Harris	
50		7	1.5	6					Programmable Gain (G = 1,10,100)	PGA102A	Burr-Brown (3413)	
	3	2	0.5	0.7		85				TLE2021C TLE2021I	TI TI	40
	4	1.4 *	0.5 *	0.1	1000	85	1		Selectable Input	OPA201A	Burr-Brown	
	5	2 *	2 *	0.7	1000	100	0		Low Power Precision	TLE2021M	‡ TI	
		5	1 *	0.5 *	50	90	0		Higher Accuracy 741	AD741L	AD (3340)	
50 fA		50	0.3	0.3	1000	80	1			1035	TeledyneC	
80	5	2	—	0.01	1000	120	4		High Gain Instrumentation	OP06B OP06F	‡ AD AD	45
	10	0.5	0.3 *	0.12 *	1000	110	1		Precision Low Noise	AD504M	AD	
		1	0.3 *	0.12 *	1000	110	1		Precision Low Noise	AD504L AD504S	AD † AD	
	100	10	90 500	40 150			0 0			VA711J VA721J	VTC VTC	50
150	6	5	0.6	0.25	500	84			Low Power	OP21H	‡ AD (3337, 3341)	
0.5 *	5000 *	5 *	95	4000	50	60 *	0			CLC201AI CLC201AM	Comlinear Comlinear	
			160	6000	50	56 *	0			CLC203AI CLC203AM	Comlinear Comlinear	55
			170	6500	50	60 *	0			CLC221AI CLC221AM	Comlinear Comlinear	
0.5	10000 25000	25 2000	350 8 *	1200 250	1 to 10 582	50 70	0 0		Low Distortion Wideband Precision	CLC409 OPA620L	† Comlinear Burr-Brown (3411)	60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

• Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
0.50	.020 0.005	.01 0.0003 *	2.0 10	.12 1 *	.04 0.6	100 100	80 76 *	0 0	Low Power, Precision Low Drift FET	HA7713B 3527A	◊ Harris Burr-Brown	
0.500	0.01 0.02	0.005 0.01	5 2.0	13* 1.	25 .45	100 100	85 80	0 0	Wideband-JFET, Dielectrically Isolated Low Power, Precision	OPA606L HA7712B	Burr-Brown (3408, 3410) ◊ Harris	
0.6	0.05	0.02	9	8*	18	120	82	0	Wideband, Low-Drift JFET	LT1022C LT1022M	† LinearTech † LinearTech	5
	0.1	0.01	5	1 *	0.3 *	100	110	0	Precision, Low Input Current	LM111C LM111C	Motorola National	
	26	5	10	3	70	100	90			LF401AC	National	
0.7	30	2	5	2.5 *	18 *	50	90	0	High Speed	OP01	‡ AD	10
0.75	0.010 0.075	0.002 2.8 3.8	7.5 1.3 1.3	2.4 * 0.5 * 0.5 *	5 0.1 0.1	500 150 150	85 110 106	0 0 0	Low Bias Current Ultra Low Noise Ultra Low Noise	OP43F OP07 OP07E	AD (3339, 3341) † Raytheon † Raytheon	
	0.2	0.04	10	1.5 10 *	100 50	500 200	86 86	1	High-speed, precision. Fast Settling	OP44E OP42E	AD (3336) AD (3336)	15
	4	4	3 *	5	28	100 *	100 *	0		OPA404BG	Burr-Brown (3409)	
	80	5	—	0.44 * 1 *	0.3 0.3 *	50 50	80 80	0 0	High Performance High Performance	μA741EC μA741AM	◊ National ◊ National	
		50	0.5* 2.5	35 30	25 * 15	300	86 106	0	Low Noise, Wideband	HA5221 HA5221/883	† Harris (3508) † Harris	20
0.9	0.03	0.015	7	0.30	0.01	100	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1706A	◊† AdvLinear	
		0.025	7	0.4 1	0.33 1.4	40 50	70 70	0 0	CMOS, Rail-to-Rail CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1701A ALD1702A	◊† AdvLinear ◊† AdvLinear	
	0.85	0.025	7	2.1	5	50	70	0		ALD1704A	◊† AdvLinear	
1	—	—	—	1G *					High Speed	MN542	† MicroNet	25
	0.000075	—	25	0.35	0.3	50	70	0	FET Electrometer	AD515L	AD (3341)	
	0.00015	—	15	0.35	0.3	100	80	0	FET Electrometer	AD515K	AD (3341)	
	0.0003	0.00008	25	1 *	1.6 *	100	66	0	Ultra Low Bias FET	OPA104AM	Burr-Brown	
	0.001	0.0005	15	0.7 *	0.3	40	70	0	Precision Low Drift FET	AD545K	AD (3342)	
	0.002	0.001	25	0.7 *	0.3	20	66	0	Precision Low Drift FET	AD545J	AD (3342)	30
	0.004	0.003	20	2	1		90	0	Low Noise	OPA111V	† Burr-Brown (3408)	
										OPA111V/883B	† Burr-Brown (3408)	
	0.005	—	10	1 *	3	75	80	0	High Accuracy, FET	AD506L	AD	
		0.0002	10	1 *	1	75	76	0	Precision FET	LH0052C	National	
	0.01	0.002	7.5 *	0.5 *	1	500	90	0	JFET	OP41F	AD (3339, 3341)	35
			10	0.5 *	1	500	90	0	JFET	OP41B	† AD (3339, 3341)	
		0.01	10	—	125 *	100	130 *	2	to ± 150V supply, 40mA output	PA84A	Apex	
				3	20	1000	130 *	0	to ± 150V supply, 75mA output	PA83A	Apex (3378)	
			15	3.5	20	6	75	0	High-speed precision Di-FET	OPA602A	Burr-Brown (3408, 3410)	40
			25	1	20	4000	110	1		1022	TeledyneC	
	0.010 0.015	0.002 —	10 25	2.4 * 10 *	5 50	500 50	85 80	0	Low Bias Current Fast Wide Band, High Accuracy, FET Input Fast Wideband, High Accuracy, FET Input	OP43B	† AD (3339, 3341)	
										AD528K	AD	
										AD528S	† AD	
	0.025	0.002	10	2 5 *	16 30 *	50 40 60	80 80 80	0 1 —	High Speed Precision Bipolar JFET High Speed, Low Drift FET High Speed, Low Drift FET	AD544K AD382S AD381S	† AD (3340) † AD † AD	45
			15	2	16	50	80	0	High Speed Precision Bipolar JFET	AD544S	AD (3340)	
		0.01	10	1 *	3	50 200	76 80	0 0	Precision Bipolar JFET Precision Bipolar JFET	AD542S AD542K	† AD (3340) AD (3340)	
0.035	0.002		25	20	94	60	70	1	Wideband, Fast Settling	OPA605A	Burr-Brown (3410)	50
										OPA605H	Burr-Brown	
	0.005		5	1	3	100	76	2	Ultra Low Drift BIFET	AD547J	AD (3339, 3342)	
0.05	0.005		15	5 *	30 *	40 60	76 76	1 —	High Speed, Low Drift FET High Speed, Low Drift FET	AD382J AD381J	AD AD	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
1	0.05	0.01	10	2 *	10 *	100	80	0		OPA445SM † Burr-Brown (3411)		
			15	70	1000	30	60	1	Wideband, Fast Settling FET	AD3554B	AD	
			25	70	1000	30	60	1	Wideband, Fast Settling FET	AD3554S	† AD	
	0.03	30	1.6 *	6	32	95	0	0	High Current	OPA541BM Burr-Brown (3411)		
	0.1	15	150	1000	0	44	60	1	Wideband, Fast Settling	BB3554B	Maxim	5
								1	Wideband, Fast Settling	MX3554B	Maxim	
		25	150	1000	0	44	60	1	Wideband, Fast Settling	BB3554S	† Maxim	
								1	Wideband, Fast Settling	MX3554S	† Maxim	
0.050	0.01	15	70	1000	100	44	44	1	150 ns Settling to 0.05%	3554B	Burr-Brown (3411)	10
		25	70	1000	100	44	44	1	150 ns Settling to 0.05%	3554S	Burr-Brown (3411)	
0.1	0.005*	5	3	190	10	58	58	0	Fast Settling FET	AH103L	OEI	
			4.8	220	10	58	58	1	Fast Settling FET	AH104L	OEI	
		10	3	190	10	58	58	0	Fast Settling FET	AH103S	† OEI	
			4.8	220	10	58	58	1	Fast Settling FET	AH104S	OEI	
	0.01	50	50 *	250 *	100	70 *	70 *	1	Wideband, Fast Settling	3551J	Burr-Brown (3410)	15
										3551S	† Burr-Brown (3410)	
	0.02	10	—	35	75	86	—	—	Wideband, Decompensated, Settles to 0.01% in 1.5 μs	OP17B	‡ AD (3336, 3342)	
			13 *	7.5	30	85	0	0	Bias Compensated	OP15B	† LinearTech	
										OP15F	LinearTech	
					75	86	0	0	Bipolar-JFET, Bias Comp.	OP15F	AD (3337, 3342)	20
			18 *	12	30	85	0	0	Wideband-JFET, Bias Comp.	OP16B	† LinearTech	
										OP16F	LinearTech	
					75	86	0	0	Wideband-JFET, Bias Comp.	OP16B	‡ AD (3337, 3342)	
										OP16F	AD (3337, 3342)	
		15	0.4	23	10	100			Low-Cost Programmable Gain Instrumentation Amp.	AM551M	Datel (3442)	25
		20	40	330 *	25	60	1	1	Wideband, Fast Settling	AD380K	AD	
										AD380L	† AD	
										AD380S	AD	
	0.04	50	10 *	65	100	70 *	0	0	Fast Settling, 1 μs to 0.01%	3550J	Burr-Brown (3410)	
	0.040	50	10 *	65	25	70 *	0	0	Fast Settling, 1 μs to 0.01%	3550S	† Burr-Brown (3410)	30
			20 *	100	100	70 *	0	0	Fast Settling, 0.6 μs to 0.01%	3550K	Burr-Brown (3410)	
0.12		10	35	300						AD843	AD (3336)	
0.2	0.04	10	1.5	100	500	86			High-speed, precision.	OP44A	† AD (3336)	
			10 *	45	160	80	1	1	Fast Settling	OP42A	† AD (3336)	
	0.1	10 *	3	13	50	80	0	0	BiFET	TL088I	TI	35
			8 *	30 *	25	—	0	0		MC35081	† Motorola	
				32 *	25	—	0	0		MC34081	Motorola	
			16 *	55 *	25	—	—	—	Decompensated	MC35080	† Motorola	
0.3	0.02	15	40 *	220 *	25	60	1	1	Wideband, Fast Settling	1437	TeledyneC	40
										1437HR	† TeledyneC	
2	100	10	30	300 *	100	70	2	2	Low Offset, Fast Settling	HOS060	† AD	
										HOS060/883	† AD	
3	200	8	300	1100	1	80	0	0	High-speed, Voltage Feedback	CLC420A	‡ Comlinear	
5			1.0	1.5	56	110				SL562	GEC Plessey	
	0.5	10	0.8 *	0.12 *	40	84	0	0	Precision, Low Input Current	OP12C	‡ AD	45
										OP12G	AD	
								1	Precision, Low Input Current	OP08C	‡ AD	
										OP08G	AD	
6	0.5			4		80				TA7540	Toshiba	
8	8	3 *	4	24	100 *	100 *	0	0		OPA404AG	Burr-Brown (3409)	50
										OPA404SG	† Burr-Brown (3409)	
10	3	3	—	0.7 *	500	85	0	0	Programmable Micropower	OP32G	AD (3337, 3339, 3341)	
100		2	50	2000	1000		1	1	Module, Wideband, Fast Settling	9808	OEI	

(Continued)

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
1	100	20	4 *	1 *	0.25 *	30	70	2	High Voltage	LH0004	† National	(Cont'd)
			5	1 *	0.005 *	1000	110	4	High Accuracy Instrumentation	LM725	† National	
	250	20		15	50	100	86		Wideband Amplifier	LT118A	† LinearTech	
		70	20	—	—	20	70	1	General Purpose	LT318A	LinearTech	
										TA7502B	Toshiba	5
	300	50		15	± 5		100		Power Op Amp	MA921	AnalogSys	
	650	15	4.3	40 *	30	10	60	0		VA705L	VTC	
	1000	1000		80 *	130	30	90	0	High Speed, Wide Band Operational Amplifier	OP64A	‡ AD (3336)	
	3100	500	10	165	2500		40		Wide Bandwidth, Fast Settling	THC4231	TRWLSI	
	3300	50	15	50	300	5500	80	0	High-Speed, Low Power	AD847	† AD (3336)	10
	3500	100	14	80	375	9000	115	0	Wideband, Fast Settling	AD842	† AD (3336)	
	5000		10 *	100	1200	400	58	0		HA5004	† Harris (3508)	
1 *	5000 *		10 *	165	3000	5	46 *	0		CLC231ABC	Comlinear	
										CLC231AI	Comlinear	
										CLC231AM	Comlinear	15
1	5000		10	270	3000	± 1 to ± 5	46	0	Low Distortion	CLC232	† Comlinear	
	8200	500	0.3	25	150	30	100		High Speed, Low Noise	AD829	AD (3335, 3354)	
	30000	2000	8 *	300 *	250		65	0	Wideband Precision	OPA620K	Burr-Brown (3411)	
										OPA620S	† Burr-Brown (3411)	
		5000	5	100 *	240		85	1	Wideband	OPA675K	Burr-Brown (3412)	20
										OPA676K	Burr-Brown (3411)	
	50000	1	5	100	3000	1	35	0	Transimpedance fast-settling	SP9610	† Sipex-HSD	
1.0	1000	1000		80 *	130	30	90	0	High Speed, Wide Band Operational Amplifier	OP64E	‡ AD (3336)	
			2 *	1000 *	250 *	80	100		Closed Loop Gain > 10	HFA0002	† Harris (3508)	
1.2	0	3	2	0.35	0.08	250 *	80	0	Programmable Micropower	OP22H	AD (3337, 3339, 3341)	25
1.3	7	6	4.5	0.4	0.1	120	100	0	Instrumentation	OP05C	LinearTech	
			1.2 *	0.25 *	120	100	0		Instrumentation	OP05C	‡ AD (3340)	
	110	13	1.4 *	—	0.01	500	110	4	High Gain Instrumentation	OP06G	AD	
1.5	0.00025	0.000005 *		0.3 *	0.2	100000	50	0	Low Bias Current	OP80E	AD (3337, 3341)	30
	0.001	0.000008 *		0.3 *	0.2	100000	50	0	Low Bias Current	OP80F	AD (3337, 3341)	
		0.0005	20	1.2	10	400	110	1		1032	TeledyneC	
	0.003 *	0.001 *	6 *	0.4	10 *	15	65			TLE2061AC	TI	
										TLE2061AI	TI	
										TLE2161AC	TI	
					18 *	15	65			TLE2161AI	TI	35
	0.004 *	0.002 *	6 *	2 *	2	30	72	0	J-FET Low Power, High Drive	TLE2061AM	† TI	
								1	J-FET Low Power, High Drive	TLE2161AM	† TI	
	0.01	—	25	1 *	3	50	80	0	High Accuracy, FET	AD506K	AD	
			50	1 *	3	50	80	0	High Accuracy, FET	AD506S	† AD	
	0.015	0.01	5 *	10	22	56	80	0	Wideband-JFET, Dielectrically Isolated	OPA606K	† Burr-Brown (3408, 3410)	40
										OPA606S	† Burr-Brown (3408, 3410)	
	0.02	0.003		120		500	86		Differential Video Amp	μA733	† Signetics	
	0.025	0.005	7.5	2.4 *	5	300	85		Low Bias Current	OP43G	AD (3339, 3341)	
	0.03	0.005		120		600	86		Differential Video Amp	μA733C	† Signetics	
	0.05	0.1	± 30	0.4	400		90	1	High Voltage	PA85	Apex (3378)	45
	0.2	0.1	4.3 *	1.1 *	2	4	75	0	Low Power Bipolar J-FET	TL031M	† TI	
			8 *	3.1 *	15	50	75	0	Bipolar J-FET	TL051M	† TI	
	0.25	0.05	8	1.2	80	500	80		High-speed, precision.	OP44F	AD (3336)	
			8 *	10 *	40	200	80	1	Fast Settling	OP42F	AD (3336)	
1.5 *	10 μA *		10 *	120 *	1200 *		70 *	0	Clamped Output Voltage and Fast Overload Recovery	CLC501	† Comlinear	50
1.5	26	5	10	3	70	100	80			LF401C	National	
	80	5	2	0.5 *	0.005 *	1000	120	4	Instrumentation	LM725A	National	
	100	10			0.17 *	130	100	0	200°C Operation	LM118X	† LinearTech	
		15	3	0.3 *	0.12 *	500	100	1	Low Drift, Low Noise	AD504K	AD	
	120	45	4 *	1 *	0.25 *	30	70	2	High Voltage	LH0004C	National	55

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

‡ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
2	± 5		25	1.4	5	468	75	2	24 W BTL Audio Amplifier	TDA1515A	Signetics	
				7	25	68	66	2	High-Speed Micropower	MAX402	Maxim	
									High-Speed Micropower	MAX403	Maxim	
	0.001 *	0.001 *	0.7 *	0.1 *	0.04 *	30	60	1	Programmable, Low Bias	TS271BC	SGS-Thomson	5
							70	1	Programmable, Low Bias	TLC251BC	TI	
										TLC271BC	TI	
			5 *	2.3 *	4.5 *	10	70	1	Programmable, High Bias	TLC271BC	TI	
	0.002	0.0001 *		0.3 *	0.2	100000	50	0	Low Bias Current	OP80B	AD (3337, 3341)	
	0.005	0.001	0.7 *	2.2	5.3	7	70	0	LinCMOS, Programmable	TLC271B	TI	10
		0.004	10	2	5		116	0		SP121	Sipex-HSD	
	0.01			60	1000					SP4010	Sipex-HSD	
	0.02		50	100	1000	100	90	1	Fast-Settling, FET input	1443HR	TeledyneC	
		0.01	25	15	75	400	94	1		1027	TeledyneC	
	0.025 *	0.01 *	20	1 *	3	50	76	0	Precision Bipolar JFET	AD542J	AD (3340)	15
	0.03	0.015	7	0.3	0.01	100	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1706B	AdvLinear	
		0.025	7	1	1.4	50	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1702B	AdvLinear	
	0.05	0.005	20	2	15	30	74	0	High Speed Precision Bipolar JFET	AD544J	AD (3340)	
		0.01	5	—	40	50	85	—	Wideband Decompensated	PM157A	AD (3342)	
										LF157A	National	20
										LF357A	National	
				2.5 *	3	50	85	0	Bipolar - JFET	PM155A	AD (3342)	
										LF155A	National	
										LF355A	National	
				2.5	3	50	85	1	JFET Input	LF155A	SGS-Thomson	25
				4	10	50	85	0	Wideband - JFET	PM156A	AD (3342)	
										LF156A	National	
										LF356A	National	
									Wideband-JFET, Dielectrically Isolated	OPA156A	Burr-Brown (3408)	
										OPA356A	Burr-Brown (3408, 3410)	
								1	JFET Input	LF156A	SGS-Thomson	30
				15	40	50	85	1	JFET Input	LF157A	SGS-Thomson	
				50	70	1000	100	1	Wideband, Fast Settling FET	AD3554A	AD	
	0.025		20	3	16	150	76		Precision High Speed BiFET	AD711A	AD (3337, 3340, 3342)	
										AD711J	AD (3337, 3340, 3354)	
										AD711S	AD (3337, 3340, 3342)	35
	0.03	10 *		0.48 *	0.16 *	20	76	1	Low Power	ICL7614AC	Maxim	
										ICL7614AM	Maxim	
				1	1.6	80 *	70	0	Low Power	ICL7611AC	Harris	
										ICL7611AM	Harris	
									Low Power, Extended CMVR	ICL7612AC	Harris	40
										ICL7612AM	Harris	
				1.4 *	1.6 *	10	76	0	CMOS, Low Power, Programmable Low Bias	ICL7611AC	Maxim	
										ICL7611AM	Maxim	
									Programmable Bias, Extended CMVR	ICL7612AC	Maxim	45
										ICL7612AM	Maxim	
										ICL7616AC	Maxim	
										ICL7616AM	Maxim	
	0.05				20		90		High Voltage	PA08M/883	Apex (3377)	
			30	—	30 *	800	96	0	To ± 150V supply, 150mA output	PA08	Apex (3378)	
				1.3 *	5 *	40	120 *	0	High Voltage, High Output Current	PA07M	Apex (3379)	50
					5	100	120 *	0	to ± 50V supply, 5A output	PA07	Apex (3379)	
					30 *	800	96	0	To ± 175 V supply, 150 mA output	PA08V	Apex (3378)	
	0.1		50	150	1000	0	44	1	Wideband, Fast Settling	BB3554A	Maxim	
							60	1	Wideband, Fast Settling	MX3554A	Maxim	
	2		20	1000	275	31.6	80	0		TP3554-HR	TeledyneC	55

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
2	0.050	0.01	50	70	1000	100	78 *	1	150 ns Settling to 0.05%	3554A	Burr-Brown (3411)	(Cont'd)
	0.1		20	18	190	20	58	0	Hybrid, Wideband, Fast Settling	AH103	† OEI	
			35	220	20	58	1	1	Hybrid, Wideband, Fast Settling	AH104	† OEI	
	0.005*		20	3	190	10	58	0	Fast Settling FET	AH103J	OEI	5
			4.8	220	10	58	0	0	Fast Settling FET	AH104J	OEI	
	0.025		50 *	70 *	500 *	20	70	2	Bipolar JFET	EL2006	† Elantec	
	0.05		10 *	3 *	13 *	50	80	0	Bipolar JFET	μA771AC	National	
										μA771AM	† National	
			20	150	400	10	60	3	Fast Settling, Wideband	OPA600V	Burr-Brown (3411)	
										OPA600V/MIL	† Burr-Brown (3411)	10
										OPA600V/883B	† Burr-Brown (3411)	
0.2	0.02		50	40 *	225	30	60	1	Wideband, Fast Settling	1438	TeledyneC	
										1438HR	† TeledyneC	
	0.1		10 *	8 *	25 *	25	70	0	Low offset, low drift JFET input	LF411C	◊ Motorola	15
			20	2.7	8	25	70	0	J-FET input	LF411C	Ti	
									Wideband JFET	LF411	National	
				3	10	50	80	0	JFET input, High Speed	LF351A	SGS-Thomson	
				17	165	56	80	0		1463HR	† TeledyneC	
							90	0		1463	† TeledyneC	
0.3	0.025		7	0.4	0.33	32	65	0	CMOS, Rail-to-Rail	ALD1701B	◊ AdvLinear	20
0.5	10		5	2.5 *	5	75	85	0	Bipolar-JFET	LF155A	† LinearTech	
										LF355A	LinearTech	
				4	10	75	85	0	Wideband-JFET	LF156A	† LinearTech	
										LF356A	LinearTech	
0.50	—		75	60 *	500	200	—	0	Inverting, Settles to 0.01% in 200 ns	1430	TeledyneC	25
										1430HR	† TeledyneC	
0.85	0.025		7	2.1	5	50	70	0		ALD1704B	◊ AdvLinear	
1.5	0.01		20		1	300	76		Precision Low Power BiFET	AD548A	AD (3339, 3341)	
				1	1	300	76		Precision Low Power BiFET	AD548J	AD (3339, 3341)	
										AD548S	† AD (3339, 3341)	30
2	0.2		15	1 *	0.2 *	50	85	0	Micropower, Supply Current 600 μA	LM112	† National	
										LM212	National	
					0.3 *	50	85	1	Precision Bipolar	AD208	AD (3345)	
										PM108	‡ AD	
										LM108	† LinearTech	35
										LM108	◊ National	
										LM208	National	
										LM108	† SGS-Thomson	
										LM108M	† SGS-Thomson	40
										LM208	SGS-Thomson	
										LM108	† TI	
3			45	2000	2	2	62	0	Low Gain with Disable	CLC430	◊ Comlinear	
5			35	215	2600	10		0	Driver Amplifier	CLC560	† Comlinear	
					3300	10		0	Driver Amplifier	CLC561	† Comlinear	
	0.6		18	50	75		110	0		VA703	† VTC	45
6 *	1			40 *	280 *	10	70		Wideband, Unity Gain Stable	SP2541	† Sipex-HSD	
7.5	3		10	1	0.03	25	70			LM776	National	
10 μA	1 μA		10	200	700	1000	50	0	Wideband, Current Mode Feedback	EL400	◊ Elantec	
										EL400J	‡ Elantec	
									Wideband, Current Mode Feedback Amp and Disable	EL2070	◊ Elantec	50
										EL2070J	‡ Elantec	
	5 μA		7	85	625	2	60	0	Wideband, Current Mode Feedback	EL2130	◊ Elantec	
2 *	11 *	0.3 *	15	2	0.45	40	80		With Adjustable Reference	LM611AC	National	
										LM611AM	† National	
										LM611C	National	55
2	20	0.7	2 *	—	—	60	89	0	Op Amp and Voltage Reference	LM10BL	LinearTech	
										LM10BL	National	
						120	93	0	Op Amp and Voltage Reference	LM10	LinearTech	
										LM10B	LinearTech	
										MCELM10	MCE	60
										LM10	† National	
										LM10B	National	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
2	20 μA *	20 *	730 *	800 *	0.95 *	0			Unity Gain Closed-Loop Buffer Amplifier	CLC110	† Comlinear	
	35	7	20 *	40 *	200	10	70	0	Wideband, Unity Gain Stable	HA2541-5	Harris	
	50	5	10	0.8	0.25	50	90	0	General Purpose	OP02C	‡ AD	(3340)
	60	10	15	—	40	50	70	1	60 V/μs Comp. for g = 5	SE538	† Signetics	
				3 *	25	50	70	0	High Slew Rate	SE530	† Signetics	5
	75	5	10	0.8	0.5 *	50	80	0	Dual Matched	OP14C	◊ AD	(3340, 3343)
		10	3 *	1 *	0.5 *	50	80	1	High Performance Bipolar	LM201A	◊ TI	
			15	1 *	0.5 *	25	80	1	General Purpose, Uncompensated	LM101A	† SGS-Thomson	
						50	80	0	General Purpose, Compensated	LM107	† LinearTech	
										LM107	‡ National	10
										LM207	National	
										SG107	◊† SiliconG	
										SG207	◊ SiliconG	
									Higher Accuracy 741	AD741S	† AD	(3340)
						1			General Purpose, Improved 101, Uncompensated	AD101A	† AD	15
										AD201A	AD	
										LM101A	† LinearTech	
										LM101A	† Motorola	
										LM201A	Motorola	20
										LM101A	◊‡ National	
										LM201A	National	
										LM101A	† Raytheon	
										LM201A	SGS-Thomson	
										SG101A	◊† SiliconG	25
										SG201A	◊ SiliconG	
						90	0		Higher Accuracy 741C	AD741K	AD	(3340)
	200	50	10	5 *	0.3 *	25	80	3	General Purpose	LM709A	† National	
										SFC2709A	† SGS-Thomson	
	250	200	20	3	32	10	70			LH4105C	National	
	350	250	20	3	32	10	70			LH4105	† National	30
	500	50	10 *	3.5 *	13 *	50	80	1	High Performance, Single Supply	MC33071A	Motorola	
										MC34071A	Motorola	
										MC35071A	† Motorola	
	800	200	—	10 *	13 *	50	80	1	Wideband, Low Noise	XR5534M	† Exar	
										RM5534	† Raytheon	35
										RM5534A	† Raytheon	
										SE5534	† Signetics	
										SE5534A	† Signetics	
	1000		6 *	90	1000 *		62		High-Speed, Current Feedback	OP160A	‡ AD	(3335)
										OP160E	‡ AD	(3335)
			30	90	1000	1 to 10	50	0	Low Power	CLC414	† Comlinear	40
	1500	300	—	10 *	6 *	25	70	1	Low Noise, Comp. for G = 3	SSM2134	AD	(3354)
	2000	2000		80 *	130	20	84			OP64F	AD	(3336)
	5000		30	160	1500	1 to 10	50	0	Low Power	CLC406	† Comlinear	
2 *	10000		20 *	200 *	700 *		50 *	0	Wideband, Fast-settling	CLC400	† Comlinear	45
2	14500	1000	20	400	340	151	75	1	Gain > 10	HA2850	† Harris	(3508)
				500	625	20	75	1	Lower Power HA2539	HA2839	† Harris	(3508)
									Lower Power HA2540	HA2840	† Harris	(3508)
	20000	6000	20 *	400 *	350	10	70		Low Power Enhanced HA-2540; I supply < 16 mA.	EL2040	◊† Elantec	
		7000	20 *	50 *	150	10	70		Low Power, Enhanced HA-2541; I supply < 16 mA.	EL2041	† Elantec	50
				150 *	160	10	74		I supply < 16 mA.	EL2195	Elantec	
									Low Power, Enhanced HA-5190; I supply < 16 mA.	EL2190	◊† Elantec	
	35000	5000	10	100 *	200		75	1	Wideband	OPA675J	Burr-Brown	(3412)
										OPA675S	† Burr-Brown	(3412)
										OPA676J	Burr-Brown	(3411)
										OPA676S	† Burr-Brown	(3411)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
2	35000									(Cont'd)		
		7000	9 * 20 *	40 * 40 *	200 200	10 10	70 70	0	Wideband, Unity Gain Stable Wideband, Unity Gain Stable, Fast Settling. Wideband, unity gain stable, fast settling.	HA2541-2 EHA-2541-2 EHA-2541-5	† Harris † Elantec Elantec	
2.5	0.002 12	0.0001 * 12	- 5 *	0 4	0.2 24	75 100 *	50 100 *	0 0	Low Bias Current OV In/OV Out	OP80G OPA404KP OPA404KU	AD (3337, 3341) Burr-Brown (3409) Burr-Brown (3409)	5
	125	35	2 *	— 1 *	— 0.005 *	250 250	96 94	4 4	Low Drift High Accuracy Instrumentation	IR9725 LM725C	Sharp National	
	200	40	5	0.3 *	0.12 *	250	94	1	Low Drift, Low Noise	AD504J	AD	
	250	50	10 *	1 *	0.25 *	100	90	2	High Gain Instrumentation, 50 mA	LH0020	† National	10
	2500	2500		80 *	130	20	84			OP64G	AD (3336)	
	5000 *		10 *	165	1800	70	46		Current Mode Amplifier. 200 MHz GBWP, Voltage Mode Feedback	EL2022	† Elantec	
	6000	3000			175 350				400 MHz GBWP, Voltage Mode Feedback 2 GHz GBWP, Voltage Mode Feedback	EL2073 EL2074 EL2075	Elantec Elantec Elantec	15
	25000		15	110	500		60	0	High Speed, Fast Settling	CLC500	† Comlinear	
3	0.0003 0.001	— 0.0002	50 5 *	0.35 0.11 2	0.3 2 * 7	40 1000 * 1000	66 90 90	0 0 0	FET Electrometer Low Bias Current, Low Power	AD515J HA5180-2 1346 1346-01	AD (3342) † Harris TeledyneC † TeledyneC	20
	0.003 *	0.001 *	6 *	0.4	10 *	15	65			TLE2061C TLE2061I TLE2161C TLE2161I	TI TI TI TI	
	0.004 *	0.002 *	6 *	2 *	2	30	72	0 1	J-FET Low Power, High Drive J-FET Low Power, High Drive	TLE2061M TLE2161M	† TI † TI	25
	0.020	0.020 *	25	5	20 *	400	110 *	0	High Voltage FET	3581J	Burr-Brown (3411)	
				5 *	20 *	400	110 *	0	High Voltage FET	3583	Burr-Brown	
				5	20 *	800	110 *	0	High Voltage FET	3582J	Burr-Brown (3411)	
				7 *	—	1000	110 *	2	High Voltage FET	3584	Burr-Brown	30
0.03	— 0.005		50 1	10 * 3.5	50 1	25	70 70	0	Fast Wideband, High Accuracy FET	AD528J TA75060 TA75061	AD Toshiba Toshiba	
				3	13		70			TA75070 TA75071	Toshiba Toshiba	35
0.05	— 0.01		75 10 *	90 100 *	900 100	56 75	80 74	1 1	Fast-Settling, FET Input Wideband, High Slew Rate	1443 HA5160-2 1344-01 1344	TeledyneC † Harris † TeledyneC TeledyneC	
	0.025 0.05		10 25	2 — 5 *	10 100 125 *	33 90 100		0 2 2		OPA445BM PA84M/883 PA84 PA81J PA82J	Burr-Brown Apex (3377) Apex (3378) Apex (3378) Apex (3378)	40
								0	To ±150V supply, 40mA output ±32/75Vs, ±30mA. ±70/150Vs, ±15mA.			
				5	20	1000	130 *	0	To ±150V supply, 75mA output	PA83 PA83M/883	Apex (3378) † Apex (3377)	45
				75 *	25 *	100	130 *	2	Fast Settling, High Voltage	PA84S	Apex (3378)	
0.1	0.01 0.025 0.05		25 25 25	4.5 40 * 4.5	25 350 13	398 20 70	94 70 70	0 2 0	High Voltage FET Input Wideband, High Output Current	1481 EL2006A PA02A	† TeledyneC † Elantec † Apex (3379)	50
				4.5	20	141	100	0	Video Amp	1447	† TeledyneC	
			30	— 10 150 *	100 * 20 600	— 10 150 *	104 * 64 100 *	2 2 1	to ±50V supply, 4A output to ±40 V supply, 2 A output ±40 V supply, 4 A output	PA09 PA09M PA19	Apex (3378) † Apex (3378) Apex (3378)	
			100	4	38					PA04	Apex (3379)	55
0.2	0.04 0.05		100 10 *	18 3 * 4 *	100 13 * 13 *	56 50 50	110 80 80	2 0 0	Low Noise, Bipolar JFET Low Noise Bipolar-JFET	1480HR TL071BC TL071BC TL071BC	† TeledyneC ♦ SGS-Thomson Motorola ♦ TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
3	0.2	0.05	15	—	25	50	82	—	Wideband, Decompensated, Settles to 0.01% in 1.6 μs	OP17C OP17G	‡ AD (3336, 3342) AD (3336, 3342)	
				0.2 *	5	25	80	0	Bias Compensated	OP15G	LinearTech	
				12 *	5	50	82	0	Bipolar-JFET, Bias Comp.	OP15C OP15G	‡ AD (3337, 3342) AD (3337, 3342)	5
				17 *	9	25	80	0	Wideband-JFET, Bias Comp.	OP16C OP16G	† LinearTech LinearTech	
						50	82	0	Wideband-JFET, Bias Comp. Wideband-JFET, bias comp.	OP16C OP16G	‡ AD (3337, 3342) AD (3337)	
	0.1	—	3	13 *	50	70	0	0	Bipolar JFET	TL081B TL081BC	Motorola ◊ TI	10
			10 *	1 *	3.5 *	4	80	0	Low Power, Bipolar JFET Low Power, Bipolar-JFET Programmable Bipolar JFET	TL061BC TL061BC TL066BC	◊ SGS-Thomson ◊ TI TI	
				1	3.5	4	80	1	BiFET, Low Power	TL060BC	TI	15
				3 *	13 *	50	80	0	Bipolar JFET Bipolar-JFET	TL081BC TL088C	◊ SGS-Thomson TI	
0.3	0.075	10 *	0.3	10	200 *	85	0	0	2 A Power	LH0101A LH0101AC	† National National	
				4	7.5	50	85		2A Power, 5A Peak	LH0101ACK LH0101AK	Maxim † Maxim	20
								0	2 A Power	ELH0101A ELH0101AC	† Elantec Elantec	
			10	5	7.5	50	85	0	High Output Current	LH0101A/HR	† Maxim	
0.30	0.075	10 *	4.0	10	50	85	0	0	2 A Power	LH0101A	† Maxim	25
	75	10 *	0.3	10	200 *	85	0	0	2 A Power	LH0101AC	Maxim	
0.5	0.05	25	40 *	350	20	70	2		FET Input	EL2006AC	Elantec	
1	5	20	600	600	30	60	0			2539	Sipex-HSD	
2	1	10 *	3	10 *	25	70	2		Wideband	MC34181	Motorola	
4	0.5	5	100	1000	1000	0			Settles to 0.01% in 200 ns	AM500C AM500MC	Datel Datel	30
5	5	5	20	35	150	100	1		Wideband, Uncompensated	SP2620	◊† Sipex-HSD	
7.5	3	—	0.25 *	0.16 *	100	70	0		Programmable	LM4250	† National	
10	1000	50	1	500	300	80	2		High Slew Rate	MA207	AnalogSys	
15	5	5	12	7	150	100	0		Wideband	SP2600	† Sipex-HSD	35
	15	15	35 *	25	100	80	1		Wideband, General Purpose	AD507K	AD	
20	5	—	0.85 *	0.55	80	80	0		Low Power, Radiation Resistant ± 45Vs, ± 10A, 97W.	HS3530RH	‡ Harris	
	10	40	1 *	1.8 *	63	74	0		to ± 50V supply, 15A output	PA61A	Apex (3379)	
			4 *	2.5	70	74	0		High Current (15A), High Power	PA12A	† Apex (3379)	
			4	2.5	316	100	0			OPA512S	† Burr-Brown (3411)	40
			6 *	2.5	70	74	0		to ± 50V supply, 5A output	PA10A	† Apex (3379)	
26	5	10	16	27	100	80	0			LF400C	National	
60	12	5.5 *	3	1.5	25	70	0		Four Channel Multiplexed Input	LM604AC LM604AM	National † National	
80	30	—	1 *	0.6	50	80	0		To 500 mA, Single Supply General purpose	μA759M LM741E	† National ◊ SGS-Thomson	45
		15	0.4	0.3	50	80	0		Higher Performance	LM741A LM741E	† National National	
100	100	—	10	22	30	80	1		High Slew Rate, Wideband	HS3516RH	‡ Harris	
150	30	10	1	0.6	25	80				LM759	National	50
200	30		3.5	1.6					741 General Purpose	RM4741	† Raytheon	
	50	20	1 *	0.5 *	50	80	0		Higher Accuracy 741C	AD741J	AD (3340)	
	75	10	6	6	1000	80	0		Low Noise, Wideband	HA5101	◊† Harris	
			100	40	1000	80	1		Low Noise, High Slew Rate	HA5111	◊† Harris	
250	50	3 *	1.3 *	2	50	80	0		Low Power	HA5151-2 HA5151-5	† Harris Harris	55
300	50		3.5	1.6					741 General Purpose	RC4741	Raytheon	
	100	3 *	1 *	1.5	100	70	1		0.2 A Power	ELH0041	† Elantec	
				1.5 *	100	70	1		0.2 A Power	LH0041	◊† National	
			25	0.015	3 *	100	70		High Power, High Current	52063 52106	Micropac Micropac	60
			1 *	1.5	100	70	1		1 A Power	ELH0021 LH0021	Elantec † National	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
3	1000	200	10	40	20	100	70	0	Low Noise, Wideband	MA322	AnalogSys	(Cont'd)
		500	14	50	250	30	80	0	Lower Power HA2541	HA2841	† Harris	(3508)
	2000		8 *	90	1000 *		60		High-Speed, Current Feedback	OP160F	‡ AD	(3336)
		200	4	10 *	—	20	70	0	General Purpose Wide Bandwidth	LH0003 LH0003C	† National National	
3 *	5000 *		10 *	50	300	70	50		Current mode amplifier.	EL2020	† Elantec	
3	6000	800	10	4.5	225	0.3	74		High Slew Rate	LH4161A	† National	
3 *	10000 *		20 *	150 *	1200 *		50 *	0	Wideband, Fast-settling	CLC401	† Comlinear	
3	10000	500	13	80	250	30K	85	1	High Current	HA2842	† Harris	(3508)
	13000	30	-	1460	600	47	70	1		AD5539	† AD	(3336)
3 to 16	0.001 *	0.001 *	5 *	2.3 *	4.5 *	10	70	1	Programmable, High Bias	TLC271C	◊ TI	
3.5	0.015	—	75	1 *	3	20	70	0	High Accuracy, FET	AD506J	AD	
	0.1	20	15	2.5 *	5	50	85	0	Bipolar-JFET	LF155	† LinearTech	
				5 *	9	50	85	0	Wideband-JFET	LF156	† LinearTech	
	4	2	10 *	3	10 *	25	70	2	Wideband	MC33181	Motorola	
	20	4	25	0.79	0.55	100000	85	0	Includes Precision Voltage Reference	TDC4611	◊† TRWLSI	
3.5 *	3000 *		11 *	170 *	2400 *		60 *	0	Overdrive Protected	CLC205	† Comlinear	
3.5	3000		11	170	2400	± 7 to ± 50	60	0	Low Distortion	CLC207	† Comlinear	
3.5 *	4000 *		11 *	180	3400 *		60 *	0	Overdrive Protected	CLC206	† Comlinear	
4	0.01	0.002	10	1 *	1.5	100	80	0	Micropower	LH0022	† National	
		0.005		4	10	32	90			CA5130A	Harris	
										CA5160A	Harris	
3	—		12	20 *	30 *	—	70	0	Unity Gain, Noninverting	SFC2110M	SGS-Thomson	
10	10		5 *	12 *	4	100	80	0	High Impedance	HA2600	† Harris	
				12	4	100	80	0	Wideband, High Impedance	EHA2600	‡ Elantec	
	15	15		100 *	25	100	80	1	Wideband	EHA2620	◊‡ Elantec	
			10 *	100	25	100	80	1	Wide Band, High Impedance, Gain ± 5	HA2620	◊† Harris	
			20	35 *	20	100	80	1	Wideband, General Purpose	AD507S	† AD	
	25	4	15	1	0.7	200	80		With Adjustable Reference	LM611M	† National	
		12	15 *	4 *	5 *	100	80	0	High Voltage	HA2640	† Harris	
	30	2	5	—	—	40	80	0	Op Amp and Voltage Reference	LM100CL	LinearTech	
										LM10CL	National	
						80	90	0	Op Amp and Voltage Reference	LM10C	LinearTech	
										LM10C	National	
100	10	20	12	30	30	30	90	0	High Slew Rate	SP2500	† Sipex-HSD	
									Offset Compensation	2500	◊‡ Sipex-HSD	
										2502	◊‡ Sipex-HSD	
										2505	◊‡ Sipex-HSD	
				65	15	90	0		High Slew Rate	SP2510	◊† Sipex-HSD	
									Offset Compensation	2510	◊‡ Sipex-HSD	
										2512	◊‡ Sipex-HSD	
										2515	◊‡ Sipex-HSD	
				20	120	15	90	0	Offset Compensation	2520	◊‡ Sipex-HSD	
										2522	◊‡ Sipex-HSD	
										2525	◊‡ Sipex-HSD	
								1	High Slew Rate, Uncompensated	SP2520	◊† Sipex-HSD	
200	50	15	12 *	10	50	80	0		High Speed, Fast Settling	AD518K	AD	
		20	12 *	10	50	80	0		High Speed, Fast Settling	AD518S	† AD	
	100	5	0.6	0.25		95			Low Voltage Op Amp	NE5230	◊ Signetics	
										SA5230	◊ Signetics	
250	50	—	15 *	50	50	80	0		Precision High Speed	LM118	† LinearTech	
										LM118	◊‡ National	
										LM218	National	
										LM118	Rochester	
										LM118	† SGS-Thomson	
										LM218	SGS-Thomson	
										LM218	TI	
									Precision High-Speed	LM118	◊† TI	
300	100	5 *	1 *	25	50	70	1		0.5 A Wideband	LH0061	† National	
500	75	10 *	4.5 *	13 *	25	70	1		High Performance, Single Supply	MC33071	Motorola	
										MC34071	Motorola	
										MC35071	† Motorola	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
4	500										(Cont'd)	
		150	42	0.5	18	440	76	0		SG1173	† SiliconG	
	700	100	10	—	—	25	70	1	40mA Output	MA342	AnalogSys	
			25	—	9 *	18	70	1	General Purpose, OC Output	SFC2761M	† SGS-Thomson	
										SFC2861M	† SGS-Thomson	
	1500	300	—	10 *	6 *	25	70	1	Low noise, Comp. for G = 3	XR5534	Exar	5
										XR5534A	Exar	
										XR5534C	Exar	
										RC5534	Raytheon	
										RC5534A	Raytheon	
										NE5534	Signetics	10
										NE5534A	Signetics	
				10	13	25	70	1	Low Noise, High Performance	NE5534	TI	
										NE5534A	TI	
	5000	600	3 *	4.5 *	210	6	84	0		LM6265	National	15
	6000	800	3 *	4.5 *	200	5	82	0		LM6165	† National	
	30000	5000	20 *	70 *	400	4	60 *	3	High Slew Rate	LH0024	† National	
4 to 16	0.001 *	0.001 *	5 *	2.3 *	4.5 *	10	70	1	Programmable, High Bias	TLC271M	◊ † TI	
4.5	0.03	0.015	7	0.30	0.01	100	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1706	◊ † AdvLinear	
		0.025	7	0.4	0.33	32	65	0	CMOS, Rail to Rail Single/Dual 5V Supply	ALD1701	◊ † AdvLinear	
	0.030	0.025	7	1	1.4	50	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1702	◊ † AdvLinear	20
	0.85	0.025	7	2.1	5	70	70	0	Rail to Rail	ALD1704	◊ † AdvLinear	
	100	2		1.8	2.1	50	80		Low Power, Single Supply	MC35171	† Motorola	
		50	10	1.8	2.1	50		0	Low Power, Single-Supply	MC33171	Motorola	
	170	32	6 *	—	0.04 *	25	80	1	Micropower	CA3078	† Harris	
5	—	—	—	1G *					High Speed	MN541	MicroNet	25
	0.001	0.0005	5	0.7 *	0.3	40	76	0	Precision, Low Drift FET	AD545L	AD (3342)	
	0.001 *	0.001 *	0.7 *	0.1 *	0.04 *	30	60	1	Programmable, Low Bias	TS271AC	◊ SGS-Thomson	
							70	1	Programmable, Low Bias	TLC251AC	◊ TI	
										TLC271AC	◊ TI	
										TLC271AM	◊ TI	30
			5 *	2.3 *	4.5 *	10	70	1	Programmable, High Bias	TLC271AC	◊ TI	
										TLC271AM	◊ TI	
	0.001	0.05		0.5	0.5	18	85			CA5420A	Harris	
	0.003	0.002	4 *	0.5 *	0.5 *	20	70	0	Low Supply Voltage	CA3420A	† Harris	
	0.005	0.001	0.7 *	2.2	5.3	7	70	0	LinCMOS, Programmable	TLC271AI	◊ TI	35
	0.02	0.01	30	2	50				High Power	PA04A	Apex (3379)	
		0.02	30	0.36	80		86			PA05A	Apex	
		300 *	25	150 *	250	30	70	1	Ultra High Speed, Wideband	AM1435C	Datel (3442)	
										AM1435M	Datel (3442)	
	0.025	0.002	25	15 *	50	50	80	0	Precision, High Speed FET	LH0062	† National	40
	0.03	0.02	6 *	4 *	10 *	50	80	0	MOS-Bipolar	CA3160A	† Harris	
	0.030	0.02	10 *	4 *	10 *	50	80	1	MOS, Single Supply, Strobe	CA3130A	◊ † Harris	
	0.04	0.02	4 *	0.063 *	0.03 *	10	70	0	Nanopower BiMOS	CA3440A	Harris	
			6 *	4.5 *	9 *	20	70	0	MOS FET, Single Supply	CA3140A	◊ Harris	
	0.05		25 *	140 *	1000			0	Buffer Amplifier	EL2005	† Elantec	45
			50	30	800	316	100	1	FET input, VMOS output	1465	† TeledyneC	
		0.03	15 *	0.48 *	0.16 *	10	70	1	Low Power	ICL7614BC	◊ Maxim	
										ICL7614BM	◊ † Maxim	
				1	1.6	80 *	70	0	Low Power	ICL7611BC	◊ Harris	
										ICL7611BM	◊ † Harris	50
									Low Power, Extended CMVR	ICL7612BC	◊ Harris	
										ICL7612BM	◊ † Harris	
				1.4 *	1.6 *	6	70	0	CMOS, Low Power, Programmable Low Bias	ICL7611BC	◊ Maxim	
										ICL7611BM	◊ † Maxim	
									Programmable Bias, Extended CMVR	ICL7616BC	Maxim	55
										ICL7616BM	† Maxim	
						10	70	0	Programmable Bias, Extended CMVR	ICL7612BC	◊ Maxim	
										ICL7612BM	◊ † Maxim	
		25 *		1.4 *	1.6 *	6	70	0	Programmable Bias, Extended CMVR	ICL7616DC	Maxim	60
										ICL7616DM	† Maxim	
						10	70	0	Programmable Bias, Extended CMVR	ICL7612DC	◊ Maxim	
										ICL7612DM	◊ † Maxim	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
5	0.05										(Cont'd)		
		200		1.0		50	94			CA101	Harris		
	0.1	0.02	5 *	—	—	50	85	—	Wideband Decompensated	PM157 LF357B LF157 LF257 LF357B	† AD Motorola † National National National	(3337) 5	
				2	30	25	80	1	JFET Input	LF157	† SGS-Thomson		
				2.5	5 *	25	80	1	JFET Input	LF155	† SGS-Thomson		
				2.5 *	5 *	50	85	0	Bipolar-JFET	LF155 LF255 LF355B	† National National National	10	
				5	7.5	25	80	1	JFET Input	LF156	† SGS-Thomson		
				5 *	7.5 *	50	85	0	Wideband-JFET	PM156 LF356B LF156 LF156HRH LF256 LF356B	† AD Motorola † National † National National National	(3337) 15	
	0.025	10	1	1	25	70	0		Low Power-BIFET	LF441	National		
		25 *	70 *	350	1	50	2		Ultra Fast FET	TP0032	† TeledyneC	20	
		25 *	80 *	350	1	50	2		Ultra Fast FET	TP0032-HR	† TeledyneC		
		50 *	70 *	500 *	3	70	2			EL2006C	Elantec		
	0.05	10	2	0.6	25	70			Low-Power J-FET Input	LF441C	Motorola		
		10 *	3 *	13 *	50	80	0		Bipolar-JFET	μA771BC μA771BM	National † National	25	
			4 *	13 *	50	80	0		Precision-BIFET	MC35001B	† Motorola		
		80	150	400	10	60	3		Fast Settling, Wideband	OPA600U	Burr-Brown	(3411)	
		100	150	400	10	60	3		Fast Settling, Wideband	OPA600U/883B	† Burr-Brown	(3411)	
	0.10	0.025	25 *	70 *	350	1	50	2	Ultra Fast-FET	ADLH0032 ELH0032 ELH0032C LH0032AC	† AD † Elantec Elantec † National	30	
	0.15		50	20	500	20	70	1	Hybrid, Wideband, Fast Settling	AH0605	† OEI		
	0.2	0.025	3 *	1 *	0.3 *	25	96	0	Precision Bipolar	LM111CL	National		
						50	110	0	Precision, Low Input Current	LM111L	Motorola	35	
		0.1	10 *	4 *	13 *	50	80	0	Precision-BIFET	MC34001B 1464HR 1464	Motorola † TeledyneC † TeledyneC		
			20			56	80	0					
			30	4 *	13 *	50	80	0	JFET Input, High Speed	LF351B	SGS-Thomson		
	1	0.25	25	70	500		60			CLH0032	† TeledyneC	40	
		5	20	400	400	30	60	0		2540	Sipex-HSD		
	4	2	10	4	8	25	80			LF451C	National		
5 *	5 *	1 *		400 *	400 *	10	60		Wideband	SP2540	† Sipex-HSD		
				600 *	600 *	10	60		High Slew Rate	SP2539	† Sipex-HSD		
5	5 fA		30	0.0005	0.5	100	100	0		1702	TeledyneC	(3713)	
	7.5	3	—	1 *	0.1	20	70	0	Multi-Purpose, Programmable	μA776M	† SGS-Thomson	45	
	10	6	—	0.25 *	0.16 *	50	70	0	Programmable	LM4250C	† National		
	17	0.004	—	0.063	0.03		80			CA6078A	Harris		
	20	3	—	—	2.5 *	100	80	1	High Voltage	LM144	† National		
				1 *	2 *	100	80	0	High Voltage	MC1536 LM1536 SG1536	† Motorola † National † SiliconG	50	
				40	1 *	1.5	60	80	0	Output 26V@10A	OPA501B	Burr-Brown	(3411)
										OPA501S	† Burr-Brown	(3411)	
				1 *	1.5	98	80	0	Output 32V@10A	PA51A PA51M/883	† Apex Apex	(3379) 55	
	25	25		12	4	80	74	0	Wideband, High Impedance	EHA2602 EHA2605	† Elantec † Elantec		
				100 *	20	80	74	1	Wideband	EHA2622 EHA2625	† Elantec † Elantec	60	
				10 *	12 *	4	80	74	0	High Impedance	HA2602 HA2605	† Harris Harris	
(Continued)													

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
5	25	25	15 *	100	20	80	74	1	Wide Band, High Impedance, Gain ± 5	HA2622 HA2625	† Harris Harris	(Cont'd)	
			30 *	70	20	80	100 *	1	Wideband, High Gain	1321 1321-01	TeledyneC † TeledyneC		
30	30	20	2	0.4	50	80	80	0	General Purpose	3500R/MIL	† Burr-Brown	5	
		60	2	0.4	50	80	80	0	General Purpose	3500U/883B	† Burr-Brown		
35	7	40	1	1.35	100	80			High Current, High Power	OPA501V	† Burr-Brown (3411)		
										OPA501V/883B	† Burr-Brown (3411)		
50	15	—	—	0.8 *	50	70	70	0	Programmable	MC1776	◊ SGS-Thomson	10	
			0.2	0.35	50	70	70	0	Programmable Low Power	MC1776	† Motorola		
100	12	5.5 *	3	1.5	25	70	70	0	Four Channel Multiplexed Input	LM604C LM604I	National National		
			20	10	2.5 *	18 *	25	80	0	High Speed	OP01C OP01G	† AD (3337, 3340) † AD (3337, 3340)	15
			25	20	0.8	0.25	25	70	0	Dual Matched	OP14B	† AD (3340, 3343)	
					1.3	0.25	25	70	0	General Purpose	OP02D	AD (3340)	
			100	—	1 *	0.4 *	50	70	0	Programmable	XR146	† Exar	
150	30	—	—	—	50	70	70	0	Single Supply	TL321I	TI		
160	40	—	—	0.75 *	0.16	40	86			GC810	Gennum (3495)		
200	25	10 *	20	135	15 *	80	80	1	High-Speed, High Output Current	HA2529	◊† Harris	20	
		20 *	12	25	20	80	80	0	High Slew Rate	EHA2500	† Elantec		
			12 *	25	20	80	80	0	High Slew Rate	HA2500	† Harris		
			50	20 *	8 *	15 *	50	80	1	Four Addressable Inputs, Single Amplifier	HA2400 HA2404	◊† Harris Harris	
500	150	20	—	—	20	70	70	1	General Purpose	TA7502 TA7502A	Toshiba Toshiba	25	
		200	—	—	20	70	70	0	General Purpose	IR3741	Sharp		
				0.5 *	50	70	70	0	General purpose	LM741	◊ SGS-Thomson		
								1	Uncompensated 741	LM748	◊ SGS-Thomson		
				1	0.5	50	70	0	Bipolar, General Purpose	μA741I μA748I	TI TI	30	
				1 *	0.5 *	50	70	0	General Purpose Compensated	μA741M	◊† TI		
				1 *	0.5	50	70	0	High Performance	μA741M	† SGS-Thomson		
								1	General Purpose	LM748M	† SGS-Thomson		
				30 *	50	70	70	1	High Slew Rate	SE531	† Signetics	35	
				1.0	0.5	50	94			LM741 LM748	Harris Harris		
			3 *	0.5 *	0.3 *	25	70	3	General Purpose	LM709	† National		
			1 *	0.5 *	50	70	70	0	General Purpose Compensated	AD741 PM741	† AD AD	40	
										MC1741	† Motorola		
										μA741M	◊† National		
										LM741	† National		
										RM741	† Raytheon		
										SG741	◊† SiliconG	45	
									Low Noise 741	CA6741	† Harris		
								1	General Purpose, Uncompensated	LM101	◊† National Rochester		
									Uncompensated 741	CA748 LM748 LM748C	† Harris † National National	50	
				5 *	0.3 *	12	80	3	General Purpose	SFC2709M	† SGS-Thomson		
				4 *	30 *	0.7 *	20	70	2	Programmable	CA3094A CA3094B	† Harris † Harris	
650	50	10	40 *	30	4	60	60	0		VA705K	VTC	55	
750	250			15	10	92			High-Speed	LM715M	† National		
			6 *	65 *	15	74		3	High Speed High Gain	μA715M	† National		
1000	300	20	30	15	50	90	90	0	Precision, Audio; High Linearity	MA332	AnalogSys		
			45	20		90			Audio Op-Amp	MA332C	AnalogSys		
									Audio Op-Amp	MA332M	† AnalogSys	60	
			300 *	50	150	60	10	70	1	High Power	1460	TeledyneC	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
5	1000 *	5000 *	50	—	8000	50	60	0	200 MHz -3db bandwidth, G = 1-40 200 MHz -3db bandwidth, G = 1-40; settles to 0.02% in 15 ns.	CLC220AI CLC220AM	Comlinear † Comlinear	(Cont'd)	
	2000	400	—	38 *	25 *	0.6	76	1	Large Signal Wideband	CA3100 L3100	† Harris † SGS-Thomson		
		500	25 *	5.5 *	8.0 *		70	0	Thermal Protection with Parole Circuit	LM675	National	5	
	3000		10 *	90	1000 *		60		High-Speed, Current Feedback	OP160G	‡ AD		
	5000	20000	8	100	1000	N/A	60	0	Current-Feedback	OPA603	Burr-Brown		
	6000	800	10	4.5	225	0.3	74		High Slew Rate	LH4161	† National		
	6000 *	3000 *	50	—	4000	50	60	0	100 MHz -3db bandwidth, G = 1-40 100 MHz -3db bandwidth, G = 1-40; settles to 0.02% in 25 ns.	CLC200AI CLC200AM	Comlinear † Comlinear	10	
	10000		25		4500*	10*	40*	0	150 MHz -3dB bandwidth, up to 4 A output.	WA01A 1460HR	Apex † TeledyneC	(3378)	
		300	50	1000	300	10	70	0					
	12000	5000	1.2 *	15 *	3 *	0.7	70	1	6 Volt, Wideband	CA3010 CA3029	† Harris Harris		
	15000	4000	20	6.5			74	0		SP5190	† Sipex-HSD	15	
			20 *	150	100	15	74	2	Wideband, Fast Settling	HA5190	‡ Harris		
				150 *	160	15	74		Wideband, fast settling.	EHA-5190-2	‡ Elantec		
	20000	—	10	—	800	250	70	1	Fast, Slews 800 V/μs	NE5539 SE5539	Signetics † Signetics		
		300 *	25	500 *	250	10	80	1	Settles to 0.01% in 70 ns	1435	† TeledyneC	20	
		300	25	700	250	31.6	80	1		1435HR	† TeledyneC		
	24000	5000	3.5 *	50 *	7 *	2	80	1	12 Volt, Wideband	CA3015 CA3030	† Harris Harris		
	25000		50	150	2000		46	0	Wideband, High Slew Rate	CLC404	‡ Comlinear		
5.5	25000		40	150	430		40	0	Fast Video with Disable	CLC410	‡ Comlinear	25	
6	0.025	0.002	15	1 *	1	75	70	0	High Performance FET	LH0022C	National		
	0.2	0.05	10 *	3 *	13 *	25	80	0	Low Noise, Bipolar JFET	TL071I	‡ SGS-Thomson		
						35	80	0	Low Noise, Bipolar JFET	TL071M	‡ SGS-Thomson		
						50	80	0	Low Noise, Bipolar JFET	TL071AC	‡ SGS-Thomson		
						13	50	0	Low Noise Bipolar-JFET	TL071M	‡ TI	30	
				4 *	13 *	35	80	0	Low Noise Bipolar-JFET	TL071M	† Motorola		
						50	80	0	Low Noise Bipolar-JFET	TL071AC	Motorola		
										TL071AC	‡ TI		
	0.1	—	3	13 *	50	70	0	0	Bipolar JFET	TL081A TL081AC	Motorola ‡ TI	35	
				10 *	1	3.5	4	0	BIFET, Adjustable, Low Power BIFET, Low Power	TL066I TL061I	TI ‡ TI		
					1 *	3.5 *	4	0	Low Power, Bipolar JFET	TL061AC TL061I TL061M	‡ SGS-Thomson ‡ SGS-Thomson ‡ SGS-Thomson	40	
					1	3.5	4	80	1	BIFET, Low Power	TL060I	TI	
					1 *	3.5 *	40	80	0	Low Power Bipolar JFET	TL061AC TL061M	‡ TI ‡ TI	
								1	Low Power Bipolar JFET	TL060AC	TI		
				3	13	50	80	0	BIFET, General Purpose BIFET, Low Noise	TL081I TL071I	‡ TI ‡ TI	45	
				3 *	13 *	50	80	0	Bipolar JFET	TL081AC TL081I TL081M	‡ SGS-Thomson ‡ SGS-Thomson ‡ SGS-Thomson		
								1	BIFET, General Purpose	TL080AC	TI	50	
				10	3	13	200	86	BIFET, General Purpose	TL081M	‡ TI		
				10 *	4 *	13 *	25	80	JFET Input	TL081M	† Motorola		
	0.3	0.1	10 *	1 *	3.5 *	4	80	0	Programmable Bipolar JFET	TL066AC	TI		
	10	6	—	1 *	0.1	50	70	0	Multi-Purpose, Programmable	μA776C	SGS-Thomson		
	20	5		1	10	10	70		On-Chip Buffers	MB3604	‡ Fujitsu	55	
	25	25	15 *	35 *	20	80	74	1	Wideband, General Purpose	AD507J	AD		
	30	30	15 *	4 *	5 *	100	74	0	High Voltage	HA2645 1332	Harris TeledyneC		
				65	1 *	1.8 *	63	74	0	± 45Vs, ± 10A, 97W.	PA61 PA61M/883	Apex † Apex	(3379) 60
(Continued)													

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
6	30	30	65									
				4	2.5	5	74	0	to ± 41 V supply, 5 A output	PA12H	Apex (3379)	
				4 *	2.5	70	74	0	to ± 45V supply, 5A output	PA12	Apex (3379)	
										PA12M/883 †	Apex (3377, 3379)	
				4	2.5	316	100 *	0	High Current (10A), High Power	OPA511B	Burr-Brown (3411)	
				4		316	100	0	External Current Limit	1468	† TeledyneC	5
				6 *	2.5	70	74	0	to ± 45V supply, 5A output	PA10	Apex (3379)	
										PA10M/883	Apex (3377, 3379)	
50	25	—	—	—	0.8 *	20	70	0	Programmable	MC1776C	◇ SGS-Thomson	
75	20	—	—	—	0.6		74		Programmable Micropower	NJM4250	◇ NJR (3594)	
100	10	3 *	0.4	1	1	100	77	—	Ultra-Low Power	HA5141	Harris	10
	20	20	125	400	200	60			Fast Settling, Wideband	OPA600C	Burr-Brown (3411)	
										OPA600T	† Burr-Brown (3411)	
200	0.1	10 *	3	13	50	80	1	1	BiFET, Low Noise	TL070I	TI	
250	50	—	1 *	0.5	25	80	0	0	To 500 mA, Single Supply	μA759C	National	
		10	1	0.5	25	70				LM759C	National	15
400	0.1	10 *	3	13	25	80	1	1	BiFET, Low Power	TL080I	TI	
500	200				0.5	70			Precision High-Speed	NJM741	◇ NJR	
						20	70			LM741	◇ Samsung	
			—	—	0.5 *	20	70	0	General Purpose	LM741C	◇ SGS-Thomson	
			0.6	0.5		70				SG2173	† SiliconG	20
			—	1	0.5	20	70	0	General Purpose, Compensated	LM741C	Samsung	
			1 *	0.5	20	70	0	0	High Performance	μA741C	SGS-Thomson	
							1	1	General Purpose	LM748C	SGS-Thomson	
					20-50	70	0		General Purpose Compensated	AD741C	AD (3340)	25
										PM741C	AD	
										CA741C	Harris	
										MC1741C	Motorola	
										μA741C	◇ National	
										LM741C	National	
										SG741C	◇ SiliconG	30
										μA741C	TI	
				0.5 *	20-50	70	1		General Purpose	CA748C	Harris	
										MC1748C	Motorola	
										μA748C	National	
										μA748C	TI	35
				1	100	70	1		0.2 amp Power	LH0041C	◇ National	
				1.0	0.5	20	86			LM741C	Harris	
										LM748C	Harris	
			5 *	1 *	1	100	70	1	0.2 A Power	ELH0041C	Elantec	
			10 *	1 *	0.25	100	90	2	High Gain, Instrumentation, 50 mA Output	LH0020C	National	40
					0.5 *	20	—	0	Automotive Temperature Range (-40°C to 85°C)	SA741C	Signetics	
			15 *	0.2 *	0.2 *	20	70	0	High Power	μA791	SGS-Thomson	
			30	1 *	1 *	100	70	0	1 A Power	ELH0021C	Elantec	
									1 amp Power	LH0021C	National	
	300	10 *	12 *	50	25	70	0		High Speed, Fast Setting	AD518J	AD	45
650	35	20	100	90	10	70	1		High Speed, Fast Settling	MAX408C	◇ Maxim	
										MAX408M	† Maxim	
				100	100	10	60	2		VA708K	† VTC	
				500	135	10	60	10		VA707K	† VTC	
700	200	2	0.5	18	25	70	0			SG3173	SiliconG	50
1000	200	6	1 *	9 *	10	70	1		General Purpose	SFC2861AM	† SGS-Thomson	
	300	6 *	—	9 *	12	65	1		General Purpose, OC Output	SFC2761C	SGS-Thomson	
1200	500	5 *	4 *	100 *	10	70	2		Gated	ZN424	GEC Plessey	
1500	200	—	1 *	20 *	20	70	1		High Slew Rate, High Performance	NE531	Signetics	
	500	10	1 *	0.5 *	50	90	0		General Purpose Compensated	μA741	◇ Signetics	55
5000	600	6 *	4.5 *	210	1.2	82	0			LM6264	National	
6000	800	6 *	4.5 *	200	0.9	80	0			LM6164	† National	
	1900	10	4.5	200	0.35	70			High Slew Rate	LH4161C	National	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◇ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
6	12000		5	600	2500		60	0	Clamped Output	HFA1130	♦ Harris (3505, 3508)	
									G ± 1 or 2 Buffer	HFA1110	♦ Harris (3508)	
									Ultra-High Speed	HFA1100	♦ Harris (3505)	
										HFA1120	♦ Harris (3505)	
	15000	4000	20 *	150 *	160	10	74		Wideband, fast settling.	EHA-5195	Elantec	5
				150	160	15	74	2	Wideband, Fast Settling	HA5195	♦ Harris	
	6000	100	300	420	230	45	0			HFA0005	Harris (3508)	
	18000	50	350	1000	200	47	0			HFA0001	Harris (3508)	
6.0	0.25	0.05	8 *	10 *	40	500	80	0	Ultra-low distortion	SSM2131	♦ AD (3336, 3354)	
6.5	2000		25	125	450	1		8	Precision Video Buffer	MAX405	♦ Maxim	10
7	400	75	5 *	—	—	3	60	0	150mA Output	IR91308	Sharp	
							63	0	250 mA Output, Electronic Shutdown	LM13080	National	
	6000	75	5 *	—	1.6	3	63	0	400 MHz, Electronic Shutdown	MA324	AnalogSys	
		1900	3 *	4.5 *	180	5	78	0		LM6365	National	
7.5	0.025	50		1.0	10	25	88			LM301A	Harris	15
	0.15	500		1.0		20	85			CA201	Harris	
										LM201	Harris	
	7	—	10 *	20 *	30 *	—	70	0	Unity Gain, Noninverting	SFC2310	SGS-Thomson	
		1	30	1 *	0.3 *	25	80	0	Micropower, Supply Current 800 μA	LM312	National	
								1	Precision Bipolar	AD308	AD	20
										LM308	National	
										LM308	SGS-Thomson	
	250	50			0.5		25			LM301A	♦ Samsung	
			6	1	7.5	15	70	1	High Performance	LM301A	TI	
			30		0.1	25	70			LM301A	LinearTech	25
				1 *	0.5 *	25	70	0	General Purpose, Compensated	LM307	LinearTech	
										LM307	Motorola	
										LM307	National	
										SG307	♦ SiliconG	
			30 *	1	0.5	25	70	0	High Performance	LM307	Rochester	30
										LM307	TI	
			30	1 *	0.5 *	25	70	1	General Purpose Uncompensated	AD301A	AD	
										CA301A	Harris	
										LM301A	Motorola	
										LM301A	National	35
										LM301A	SGS-Thomson	
										SG301A	♦ SiliconG	
	800	300	10	1 *	0.5	20-50	70	0	General Purpose Compensated	μA741C	♦ Signetics	
	1000	500	5	1	1	100	70			LH4141C	National	
	1500	250			10	8	92		High-Speed	LM715C	National	40
			6	65 *	10	10	74	3	High Speed	μA715C	National	
		500		1	0.3 *	15	65	3	Bipolar, General Purpose	μA709C	TI	
			6 *	1 *	0.5 *	20	65	1	General Purpose	LM201	National	
			6-10 *	1 *	0.3 *	15	65	3	General Purpose	LM709C	National	
8	0.2	0.05	25		2.5	40	80			LF355	LinearTech	45
										LF356	LinearTech	
	40	10	—	1 *	2.5 *	70	70	1	High Voltage	LM344	National	
	200	25	20 *	12	50	10	80	0	High Slew Rate	EHA2510	† Elantec	
				12 *	50	10	80	0	High Slew Rate	HA2510	† Harris	
				20 *	100	10	80	1	100 v/μs, Gain = 3	HA2520	♦ Harris	50
				20	100	10	80	2	High Slew Rate	EHA2520	♦ Elantec	
			30	20 *	100	10	80	1	High Speed, Fast Settling	AD509K	AD	
										AD509S	† AD	
	250	50	—	1	0.5 *	25	70	0	Power Op Amp	μA77000	National	
			10	1	0.5	25	70			LM77000	National	55
			20 *	12	20	15	74	0	High Slew Rate	EHA2502	† Elantec	
										EHA2505	Elantec	
				12 *	20	15	74	0	High Slew Rate	HA2502	† Harris	
										HA2505	Harris	
	8000	20	100	600			60	0	Low Cost	HA5020	♦ Harris (3508)	60
	18000	50	115	1200			48	0	High Speed, Programmable Supply Current	CLC505	♦ Comlinear	
	40000	15000	25 *	70 *	250	3	60 *	3	High Slew Rate	LH0024C	National	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
9	200	50		4	6	50	80		Four Input Programmable Amplifier. Four Addressable Inputs, single Amplifier	EHA-2400	† Elantec		
	250	50	30 *	8 *	15 *	50	74	1		HA2405	Harris		
										HA2406-5	Harris		
	5000	600	10 *	4.5 *	210	400	76	0		LM6261	National		
10	0.001	0.001		0.1	0.1		60		Low Voltage Low Voltage Low Voltage	NJU7001	◊ NJR	(3595)	
				0.4	0.4		60			NJU7021	◊ NJR		
				1.5	3.5		60			NJU7031	◊ NJR		
	0.001 *	0.001 *	0.07 *	0.1 *	0.04 *	30	60	1	Programmable, Low Bias	TS2711	◊ SGS-Thomson	5	
									TS271M	◊† SGS-Thomson			
			0.7 *	0.1 *	0.04 *	30	60	1	Programmable, Low Bias Programmable, Low Bias	TS271C	◊ SGS-Thomson		
							70	1		TLC251C	◊ TI	10	
										TLC271C	◊ TI		
										TLC271M	◊† TI		
	0.002	0.001		0.5	0.5	18	85		Low Supply Voltage LinCMOS, Programmable	CA5420	Harris	15	
	0.003	0.002	4 *	0.5 *	0.5 *	10	70	0		CA3420	† Harris		
	0.005	0.001	0.7 *	2.2	5.3	7	70	0		TLC2711	◊ TI		
	0.01	0.005		4	10	18	85			CA5130	Harris		
										CA5160	Harris		
0.03			20	100	4000	1000	90	2	Module, Wideband, Fast Settling CMOS, Rail to Rail, Single/Dual 5V Supply	9740	OEI	20	
		0.015	7	0.30	0.01	100	65	0		ALD1706G	◊† AdvLinear		
										ALD1701G	◊† AdvLinear		
		0.025	7	0.7 *	0.7 *	20	60	0	CMOS, Rail-to-Rail				
0.05		0.02	30	5	15	32	86	1	High Voltage, FET input	OPA8780V	† Burr-Brown		
			50	5	15	32	86	1	High Voltage, FET input	OPA8780U	† Burr-Brown		
		0.020 *	30	5	15 *	20	86 *	0	High Voltage FET	3580J	Burr-Brown		
											(3411)		
	0.025	4 *		0.063 *	0.03 *	10	70	0	Nanopower BiMOS	CA3440	Harris	25	
	0.03	7		0.7 *	0.7 *	10	60	0	CMOS, Rail-to-Rail	ALD2701	◊† AdvLinear		
		40		1.6 *	6	32	95	0	High Power	OPA541AP	Burr-Brown		
	0.05	50		0.36	80		86			PA05	Apex		
0.050	0.03	7		0.7	1.1	32	60	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD1703	◊† AdvLinear	30	
0.1	0.03	10	—	10	3	90	90	1	FET Input, Low Noise	MA333	AnalogSys		
					35	100	90	1	JFET Input	MA334	AnalogSys		
										MA400	AnalogSys		
0.10		25 *		140 *	1000			0	Buffer Amplifier	EL2005C	Elantec	35	
0.2	0.05	5 *	—	—	25	80	—	—	Wideband Decompensated	LF357	Motorola		
										LF357	National		
					2.5	5 *	25	0	Bipolar-JFET	LF355	National	40	
										LF355	Rochester		
					5	12 *	25	0	Wideband-JFET	LF356	Motorola		
										LF356	National	45	
										LF356	Rochester		
										LF356	Rochester		
			10 *	3 *	13 *	25	70	0	Low Noise, Bipolar JFET	TL071C	◊ SGS-Thomson	50	
				4 *	13 *	15	80	0	Low Noise Bipolar-JFET	TL071	Motorola		
										TL070AC	TI		
										TL070C	TI	55	
							25	80	0	Low Noise Bipolar-JFET	TL071C	◊ TI	60
										TC071	Toshiba		
0.1					13		70		J-FET Input, Wide Bandwidth	PA02D	Apex		
					8	25	70	0		LF351	TI		
					4	13	25	70		0	KF351		◊ Samsung
					13	25	70	0	Bipolar-JFET	LF351	Motorola	50	
					13 *	25	70	0	Bipolar-JFET	MC35001	† Motorola		
									JFET Input, High Speed Precision BIFET	LF351	SGS-Thomson		
										MC34001	Motorola		
		</											

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Single Units										(Cont'd)			
10											(Cont'd)		
	0.6	0.1	20 *	18 *	57 *	200	80	0	Wideband-JFET	LF400	National	5	
	1	0.25	10	5	10 *	50	85	0	High Output Current	LH0101/HR	Maxim		
			10 *	5 *	10 *	50	85	0	2 A Power	ELH0101	† Elantec		
										ELH0101C	Elantec	10	
				10	5	10	50	85	0	2 A Power	LH0101		Maxim
										LH0101C	Maxim		
										LH0101	† National	15	
										LH0101C	National		
3	1	0.1	0.4	0.1	5000	130				OPA177E	Burr-Brown	20	
											(3408)		
5 *			25 *	85 *	3000 *	50	88	0	85 MHz -3dB bandwidth, G = 1 to 40	CLC300A	Comlinear		
10 μA	5 μA	25	120	2000	3	60	0		Wideband, Current Mode Feedback	EL2030	‡ Elantec	25	
										EL2030C	◊ Elantec		
25	20	20	18	32	100	70			Fast Settling	LH4104	† National		
										LH4104C	National	30	
35	7	20 *	120	300	10	70	1		High Speed, 100mA Output, Gain ± 2	HA2542-2	† Harris		
										HA2542-5	Harris		
40	6	—	1	1		80	2			MIOP42106	† Micropac	35	
	10		1 *	2 *	70	70	0		High Voltage	MC1436	Motorola		
										SG1436	◊ SiliconG		
				1 *	1	446 *	110 *	0	High Current (5A), High Power	OPA511A	Burr-Brown	40	
											(3411)		
					1.35	562 *	110 *	0	2 A Continuous	3573	Burr-Brown		
											(3411)	45	
					1.5	50	70	0	Output 28V@10A	PA51	Apex		
						500	70	0	to ± 30V supply, 5A output	PA73	Apex		
						562 *	70	0	Output 20V@10A	OPA501A	Burr-Brown	50	
											(3411)		
										OPA501R	† Burr-Brown		
											(3411)	55	
					1.8 *	35	70	0	± 30Vs, ± 5A, 67W.	PA73M/883	† Apex		
50	10	65	1	1.35	100	70			High Current, High Power	OPA501U	† Burr-Brown		
											(3411)	60	
										OPA501U/883B	† Burr-Brown		
											(3411)		
250	50	20 *	20 *	80	7.5	74	1		High Speed, Fast Settling	AD509J	AD	65	
		25 *	12	40	7.5	74	0		High Slew Rate	EHA2512	‡ Elantec		
			12 *	40	7.5	74	0		High Slew Rate	HA2512	† Harris		
			20 *	80	7.5	74	1		80 V/μs Gain = 3	HA2522	† Harris	70	
			20	80	7.5	74	2		High Slew Rate	EHA2522	‡ Elantec		
			30 *	1.6 *	70 *	32	90 *	1	Fast Slewing	3507J	Burr-Brown		
				12	40	7.5	74	0	High Slew Rate	EHA2515	Elantec	75	
				12 *	40	7.5	74	0	High Slew Rate	HA2515	Harris		
				80	7.5	74	1		80 V/μs Gain = 3	HA2525	Harris		
				20	80	7.5	74	2	High Slew Rate	EHA2525	Elantec	80	
				20 *	80	7.5	90 *	1	High Slew Rate	1322	TeledyneC		
										1322-01	† TeledyneC		
	200		15	70	25	70	0		High Performance	LM318	TI	85	
500	200			50	25	70			Precision High-Speed	NJM318	◊ NJR		
			0.6	0.5		70				SG2172	SiliconG		
										SG3172	◊ SiliconG	90	
			15 *	50	25	70	0		Precision, High Speed	LM318	LinearTech		
										LM318	National		
										LM318	SGS-Thomson	95	
			5 *	1 *	25	25	60	1	0.5 A, Wideband	LH0061C	National		
600	220		1	0.1	100	70			μA741 Equivalent	MB3609	Fujitsu		
650	35	33	40 *	38	2	60	0		Fast Settling	VA706K	VTC	100	
	100	20	40 *	30	2	60	0			VA705J	VTC		
700	50	20	40 *	158 *	10	58	0		High-Speed	VA707	VTC		
750	—	—	—	—	14	—	1		Telephone Channel Amplifier	LS045	SGS-Thomson	105	
1000	100			2	100	80				TCA365A	Siemens		
				4	100	80				TCA2365A	Siemens		
			15 *	0.8 *	1	100 *	60	0	Output 3.5A peak	ULN3751Z	Allegro Micro	110	
	200	—	—	8 *	10 *	70 *	0		Output Current to 3A	L165	SGS-Thomson		
	300	6 *	—	9 *	5.6	60	1		General Purpose, OC output	SFC2861C	SGS-Thomson		
1000 *	5000 *	50	150	6000	5	60	0		150 MHz -3db bandwidth, G = 1-40	CLC103AI	Comlinear	115	
1200	300	6	1 *	9 *	5.6	65	1		General Purpose, High Voltage	TAA861	SGS-Thomson		
											(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
10	6000 20000	800	10 * 50	4.5 *	200 4500	300 10	74 40	0 0	150 MHz–3dB bandwidth, up to 4 A output.	LM6161	† National	(Cont'd)
		6000	20 * 20 20 *	400 * 400 * 600 *	350 350 550	10 15 * 10	60 60 60	— — —	Wideband, Fast Settling. Wideband, Fast Settling High Slew Rate, Wideband. High Slew Rate, Wideband	WA01 EHA-2540-2 HA2540-2 EHA-2539-2 HA2539-2	Apex ‡ Elantec ‡ Harris ‡ Elantec ‡ Harris	(3378)
	50000	20000	25	1	250	4	60			LH4124C	National	
11	6000	1900	6 *	4.5 *	180	1.1	78	0		LM6364	National	
11.5	4100	2000			800				150 MHz GBWP, Current Mode Feedback	EL2071 EL2171	Elantec Elantec	
12	50 60 90 650	15 60 25 35 120	65 — — —	1 * 4 1 * 500 100	1.5 4 2 * 150 * 100	500 4 50 10 10	70 74 50 60 60	0 2 0 0 2	to ± 28V supply, 5A adjustable output High Voltage High Speed	PA01 MiOP42109 MC1436C VA707J VA708J	Apex ‡ Micropac Motorola VTC ‡ VTC	(3345)
15	0.05	0.025	10	3	16 *	1	110	1	Instrumentation Amplifier	AMP05A AMP05E	AD AD	(3345)
		0.03	25 *	0.48 *	0.16 *	10	70	1	Low Power	ICL7614DC ICL7614DM	‡ Maxim ‡ Maxim	
				1.4 *	1.6 *	6	70	0	CMOS, Low Power, Programmable Low Bias	ICL7611DC ICL7611DM	‡ Maxim ‡ Maxim	
	0.050	0.030	8 *	4 * 4.5 *	10 * 9 *	50 20	70 70	0 0	MOS FET, Single Supply MOS FET, Single Supply	CA3160 CA3140	† Harris † Harris	
			10 * 25 *	4 * 1	10 * 1.6	50 80	70 70	1 0	MOS FET Single Supply, Strobe Low Power	CA3130 ICL7611C ICL7611C	† Harris ‡ Harris ‡ Maxim	
									Low Power, Extended CMVR	ICL7612C ICL7612C ICL7616C	‡ Harris ‡ Maxim Maxim	
0.065	0.005 0.01	35 20 * 35	15 * 100 * 100	50 50 70	25 25 100	70 25 70	70 70 70	0 1 0	Precision, High Speed, FET Wideband, High Slew Rate	LH0062C HA5162-5 1345	National Harris TeledyneC	
0.2	0.05 0.1	10 * 10 *	1 * 3 * 4	0.5 * 13 * 13 *	25 50 25	70 70 70	70 70 70	0 0 0	JFET–741 Bipolar-JFET Bipolar JFET	LF13741 μA771LC TL081C	National National National	
0.20	0.05	25 *	50 *	350	1	50	2		Ultra Fast FET	ADLH0032C LH0032C	AD ‡ National	
0.4	0.2	—	3	13 *	25	70	0		Bipolar JFET	TL081 TL081C TC081	Motorola SGS-Thomson Toshiba	
			10 *	1 *	3.5 *	3	70	0	Low Power, Bipolar JFET Low Power Bipolar-JFET Programmable Bipolar JFET	TL061C TL061C TL066C	‡ SGS-Thomson ‡ TI TI	
							1		Low Power Bipolar-JFET	TL060C	TI	
			10 10 *	3 3 * 4 *	13 13 * 13 *	25 25 25	70 70 80	0 1 0	BIFET, General Purpose Bipolar-JFET JFET Input	TL081C TL080C TL081C	TI TI Motorola	
25	10				30		70			TCA312A TCA315A TCA322A TCA325A	Siemens Siemens Siemens Siemens	
35 50	25 30	25 12 * 25	250 — 1	1300 — 1.6	0.93 2 80	60 60 70	0 1 0		Video Buffer High Output Current Low Power, dual 1458 Low Power, quad 1458	1359 SFC2315 GLC9458 GLC9459	† TeledyneC SGS-Thomson GoldStar GoldStar	
100	20	100	125	400	200	60			Fast Settling, Wideband	OPA600B OPA600S	Burr-Brown † Burr-Brown	(3411) (3411)
350 1000	150 50 300	10	170 0.2 60	330 1.6 *	1.0 9 30 40	60 90 *			Wideband Dual Power Op Amp Supply Voltage ± 80V Supply Voltage ± 100V	CA3450 SG3272 LM12L LM12	Harris ‡ SiliconG † National † National	(3508)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units											(Cont'd)	
15	6000	1200	10	1	120	10	70			LH4106C	National	(Cont'd)
	10000	2000	10 *	40	100	4	75	0	Video Op Amp	HA2544	† Harris (3508)	
	20000	6000	20	9.5	600	30	60			1342	TeledyneC	
			20 *	400 *	350	10	60		Wideband, Fast Settling.	EHA-2540-5	Eltantec	
			20	400 *	350	10	60	—	Wideband, Fast Settling	HA2540-5	† Harris	5
				400	400	30	60			1341	TeledyneC	
			20 *	600 *	550	10	60	—	High slew rate, wideband. High Slew Rate, Wideband	EHA-2539-5	Eltantec	
	50000	25000		37	700	150	45		Ultra High Slew Rate	HA2539-5	† Harris	
										HFA0001/883		
20				10	70	200		4	High Speed Video Amp.	MAX450C	Maxim	10
	0.00025	—	60	0.5 *	3	40	80	0	Electrometer, FET	AD523L	AD	
	0.01	—	25	0.75 *	0.5 *	50	70	0	Low Noise FET	AD514L	AD	
	0.02	—	25	0.75 *	0.5 *	50 *	70	0	Low Noise FET	AD514K	AD	
			50	0.75 *	0.5 *	50 *	70	0	Low Noise FET	AD514S	† AD	
	0.025	—	50	1 *	0.5 *	25	80	0	FET	AD3542J	AD	15
		0.01	20	1 *	1.5	50	70	0	Low Cost FET Input	LH0042	† National	
	0.05	0.005	25	1 *	1	25	70	0	Low Cost FET	LH0042C	National	
	0.1	—	25	1 *	3	50	80	0	Low Cost FET Input	AD503K	AD	
										AD503S	† AD	
	0.3	—	100	10 *	250 *	80	80		FET Input	AH0008	† OEI	20
	1	2		10	70	200		4	High Speed Video Amp.	MAX451C	Maxim	
	2			350 *	2000			0	Buffer Amplifier	EL2004C	Eltantec	
	650	120	40	40 *	38	1	60	0	Fast Settling	VA706J	VTC	
	1000	200	—	—	14 *	10 *	70 *	0	High Efficiency Output Current to 4A	L465A	SGS-Thomson	
		300	2	60	9	20	65		Supply Voltage ± 80V	LM12CL	National	25
									Supply Voltage ± 100V	LM12C	National	
	400				8	100	70			CS365	Cherry Semi	
	5000	400			100	100	80	0		9697	OEI	
	6000	1500	10	1	120	10	70			LH4106	National	
	7000	1900	10	3	250	2	70		High Slew Rate	LM6313	National	30
	50000	50	200	1000	10	50	50	2	Module, Wideband, Very Fast Settling	9826	† OEI	
22	6000	1900	10 *	4.5 *	180	350	70	0		LM6361	National	
25	0.01	0.05	20	3	16 *	1	100	1	Instrumentation Amplifier	AMP05F	AD (3345)	
	0.1	0.05	20	3	16 *	1	100	1	Instrumentation Amplifier	AMP05B	AD (3345)	
	0.2	0.1	0.6		0.1	300	110			LT1012AC	LinearTech	35
										LT1012AM	† LinearTech	
	4	1.5	0.3	0.4	0.1	5000				OPA77E	Burr-Brown (3408)	
							130			OPA177F	Burr-Brown (3408)	
				0.6	0.3	5000	120		Low Offset Voltage	OP77A	Raytheon	40
										OP77E	Raytheon	
				0.8	0.3	5000	120		Ultra Low Offset Voltage	RC4077E	Raytheon	
5	1	0.3	15	2.5	10000	126	0		High Output Current, Comp. for G > 50	OP50A	† AD (3335, 3338)	
										OP50E	† AD (3335, 3338)	
	500	200	25	30	200		50	0	100 mA Output Current	LH4101	† National	45
										LH4101C	National	
	2500	1000			600				100 MHz GBWP, Current Mode Feedback	EL2120	Eltantec	
30	0.05	0.05	65	1.6	40		84	1	Monolithic, High Voltage	PA41	Apex (3378, 3380)	
	20000		100	150	900	5.6	54	2	Hybrid, Wideband, Fast Settling	AH9914	† OEI	
	50000	20000	100	300	1	4	90	1	Wideband	9914A	OEI	
35	2	0.1	150	100	300	100	70	0	High Slew Rate	HDS060	AD	50
40	12	500	100	160	2000	10	70	0	AGC + Amplifier	CLC520	† Comlinear	
50	0.001	0.0005 *	90	0.5 *	3	20	70	0	Electrometer, FET	AD523J	AD	
	0.015	—	75	1 *	3	20	70	0	Low Cost FET Input	AD503J	AD	
	0.05	—	75	0.75 *	0.5 *	20	70	0	Low Noise FET	AD514J	AD	
60	5.6	2.8	0.6	0.4	0.1	2000				OPA77F	Burr-Brown (3408)	55
				0.6	0.3	2000	116		Low Offset Voltage	OP77B	Raytheon	
										OP77F	Raytheon	
				0.8	0.3	2000	116		Ultra Low Offset Voltage	RC4077F	Raytheon	

† Mil Temp Range (−55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Single Units										(Cont'd)		
60	5.6	2.8	1.2	0.4	0.1	2000	115			OPA177G	Burr-Brown (3408)	(Cont'd)
100	5.6	2.8	0.6	0.4	0.1	2000				OPA77G	Burr-Brown (3408)	
			1.2	0.6	0.3	2000	116		Low Offset Voltage	OP77G	Raytheon	
	10	3	1	15	2.5	7500	110	0		OP50B	AD (3335, 3338)	
										OP50F	AD (3335, 3338)	
	30000		500		5000				High Speed	WB05	Apex (3378)	
150	15	3	2		5	700	90			OP90E	Maxim	
			2.5		5	700	90			OP90A	† Maxim	
250	20	5	5		5	500	80			OP90F	Maxim	
450	25	5	5		5	400	80			OP90G	Maxim	
500	500	150	5	200	45	475	108	0	Wide-Bandwidth, Low-Noise, Precision	OP61A	‡ AD (3335, 3337)	
750	600	200	7	200	45	425	100	0	Wide-Bandwidth, Low-Noise, Precision	OP61F	‡ AD (3335, 3337)	
1000	600	200	7	200	45	425	100	0	Wide-Bandwidth, Low-Noise, Precision	OP61G	◊ AD (3335, 3337)	
25000	16	10	0.3	60	15	20000	130	0	Low Noise, Wideband, Precision	MA367	AnalogSys	
	20	15	0.6	60	17	10000	130	0	Ultra Low Distortion	MA362	AnalogSys	
	40	35	0.6	120	28	1000	114	1	Precision, Low Noise, High Speed	HA5147A-2	† Harris	
										HA5147A-5	Harris	
100000	80	75	1.8	120	28	700	100	1	Precision, Low Noise, High Speed	HA5147-2	† Harris	
										HA5147-5	Harris	
Dual Units												
500	10	10	5.0	.5	.15	1		00	0	HA5232	◊ Harris	
± 1.5	250		10	0.3	1.2	100	85	0	± 5V single to ± 20V supply, 3.0A output.	PA21A	† Apex (3379)	
	1000		15	0.3	1.2	100	85	0	+ 5V single to ± 20V supply, 2.5A output.	PA21	Apex (3379)	
			15	0.3	1.2	100	85	0	+ 5V single, to ± 20V supply, 2.5A output.	PA21M	† Apex (3379)	
0.015	0.05	0.1	0.15	0.8	2	1000	120	0	Auto-Zeroed	TSC903C	TeledyneC (3713)	
	0.09	0.02	0.15	1.5	2.5	1000	110	0	Auto-Zeroed	TSC913A	TeledyneC (3713)	
										TSC913AC	TeledyneC (3713)	
0.03		2.5	1	0.9 *	0.3					AD708	AD (3338, 3343)	
	0.12	0.04	0.25	1.5	2.5	1000	100	0	Auto-Zeroed	TSC913B	TeledyneC	
							110	0	Auto-Zeroed	TSC913BC	TeledyneC	
	4	3	0.3	1.5	0.1	5	110			RC4277	Raytheon	
0.05	0.1	0.05	0.6			2000				OP297	AD	
		0.1	0.6	0.5 *	0.05	2000000	120	0	Low Power, Precision	OP297E	‡ AD (3338, 3341, 3343)	
				0.5 *	0.05	2000000	120	0	Low Power, Precision	OP297A	‡ AD (3338, 3341, 3343)	
	0.11	0.05	0.6	3		400	110		Picoamp Input Current	AD706	AD (3338, 3340)	
	10	10		6 *	1.4	1000	110		Low Noise, Precision.	OP270A	† AD (3335, 3338)	
									Low noise, precision.	OP270E	AD (3335, 3338)	
0.06	3	2.8	0.9	0.4	0.1	400	110	0	Ultra Low Offset Matched	LT1002AC	LinearTech	
										LT1002AM	† LinearTech	
0.07	5	0.25	2.2		0.13	70	87			LT1178AM	† LinearTech	
						105	90			LT1178AC	LinearTech	
	8	0.25	1.8	0.2	0.04	20	97	0	Single Supply	LT1078AC	LinearTech	
										LT1078AM	† LinearTech	
0.075	2	1	0.5	0.5 *	0.1	3	120	0	Low Power	OP200A	† AD (3338, 3341, 3343)	
										OP200E	AD (3338, 3341, 3343)	
0.08	40	35	1	5	1.7	250	114	0	Ultra Low Noise Instrumentation	OP227A	† AD (3335, 3338)	
										OP227E	AD (3335, 3338)	
										OP227A	LinearTech	
										OP227E	LinearTech	
										OP237A	LinearTech	
										OP237E	LinearTech	
0.1	0.15	0.15	2.0	0.5 *	0.05	1500000	114	0	Low Power, Precision	OP297F	‡ AD (3338, 3341)	
	4.5	4.2	1.3	0.4	0.1	350	110	0	Ultra Low Offset Matched	LT1002C	LinearTech	
										LT1002M	† LinearTech	
	15	15		6 *	1.4	800	100		Low Noise, Precision	OP270F	AD (3335, 3338)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

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LINEAR—Operational Amplifiers—Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
0.12	0.25 6	0.25	1.5		0.1	250	112	0	Low Noise	LT1024AC	LinearTech	5
		0.35	3		0.13	55	84			LT1178M	† LinearTech	
						80	86			LT1178C	LinearTech	
	10	0.35	2.5	0.2	0.04	20	94	0	Single Supply	LT1078C	LinearTech	
										LT1078M	† LinearTech	
0.15	4 7	50	1.5	5	1.7	250	106	0	Ultra Low Noise Instrumentation	OP227B	† AD (3335, 3338)	10
										OP227F	AD (3335, 3338)	
										OP227B	LinearTech	
	15	3	2	0.02*	5K	500	90	0	Precision, Low Voltage.	OP290E	AD (3337, 3343)	15
			2.5	0.02*	5K	225	85	0	Precision, Low Voltage.	OP290A	† AD (3337, 3341)	
	20	0.8	2	1*	0.2	1500	100	0	Precision	LT1013AC	LinearTech	20
										LT1013AM	† LinearTech	
				3*	0.4	1500	100	0		OPA1013	Burr-Brown	
	2	2	100*	—	500	96	0	0	Low Power, Single/Dual Supply	OP220A	† AD	25
										OP220E	AD (3338, 3343)	
	50	3	2	1	0.7		100			TLE2022BC	TI	30
										TLE2022BI	TI	
	80	3	1.5	—	0.2	1500	95	0	Low Power, Precision Matched	OP221A	† AD (3337, 3341, 3343)	35
										OP221E	AD (3337, 3341)	
0.18	80	75	2	5	1.7	200	106	0	Ultra Low Noise Instrumentation	OP227C	† AD (3335, 3338)	40
										OP227G	AD (3335, 3338)	
										OP227C	LinearTech	
										OP227G	LinearTech	
										OP237C	LinearTech	
0.2	0.2	0.2	2.0	0.5*	0.05	1200000	114	0	Low Power, Precision	OP297G	† AD (3338, 3341, 3343)	45
		0.4	2		0.1	180	108	0	Low Noise	LT1024C	LinearTech	
		0.7	1.5		0.1	250	112	0	Low Noise	LT1024AM	† LinearTech	
		5	2	0.5*	0.1	2	110	0	Low Power	OP200G	† AD (3338, 3341, 3343)	
		20	20	6*	1.4	800	100		Low Noise, Precision.	OP270G	AD (3338)	
0.25	0.035 0.050	0.15	20	13	75					AD746	AD (3336, 3343)	50
		0.002	2.5	1*	3*	250	80	—	Ultra Low Drift BiFET	AD647L	† AD (3339, 3343)	
		0.010	5	3	16				High-Speed BiFET	AD712C	AD (3337, 3343, 3354)	
		10	5	3	3	100			Single-Supply	OP292	AD	
		20	5	0.02*	5K	350	80	0	Precision, Low Voltage.	OP290F	AD (3337, 3343)	
0.250	0.02	.01	200	1.0	.45	108	90	0	Low Power, Precision	HA7712A	† Harris	
0.3	1.3 10	0.5	2		0.1	180	108	0	Low Noise	LT1024M	† LinearTech	55
		10		6.5*	6.5	500	105	0	High Speed, Low Noise.	OP271A	† AD (3335, 3338, 3343)	
										OP271E	AD (3335, 3338, 3343)	
	15	15		6.5*	6.5	300	95	0	High speed, low noise.	OP271F	AD (3335, 3338, 3343)	55
		16	3	8*	18	1000	86	0	High-Speed, Precision	OP249E	AD (3337, 3343)	
	25	2.5	5	100*	—	300	90	0	Low Power, Single/Dual Supply	OP220B	† AD (3338, 3343)	55
										OP220F	AD (3338, 3343)	
	30	1.5	2.5	1*	0.2	1200	97	0	Precision	LT1013C	LinearTech	55
										LT1013M	† LinearTech	
										LT1013M	† TI	
	40	15	0.5	35	25	2500	95	0		HA5222	† Harris (3508)	55
		3	2*	2.8*	0.7	1500	96	0	Low Power, Precision	TLE2022BM	† TI	
										TLE2022AC	TI	
	55	4	2	1	0.7		97			TLE2022AI	TI	
	100	5	2	—	0.2	1000	90	0	Low Power, Precision Matched	OP221B	† AD (3337, 3341)	55
										OP221F	AD (3337, 3341)	
500	10			10	7	250	100			MB47833	† Fujitsu	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units (Cont'd)												
0.45	0.05	0.04	7	3.5	10	150	86		High Speed Instrumentation Amplifier	LT1057AC LT1057AM	LinearTech LinearTech	
	25	5	1.2*	0.02*	5K	300	80	0	Precision, Low Voltage.	OP290G	AD (3337, 3341)	
	55	4	2 *	2.8 *	0.7	1000	93	0	Low Power Precision	TLE2022AM	† TI	
0.5	0.001	0.0005 *	0.5 *	1.9 *	2	90	80	0	Low Noise, Precision	TLC2202AM	† TI	5
	0.004	0.003	2.8	2 *	2 *	500	96			OPA2111BM	Burr-Brown (3408)	
	0.005	0.001	0.7 *	0.1	0.05	30	70	0	LinCMOS, Low Bias	TLC27L7I	† TI	
			2 *	0.6	0.6	20	70	0	LinCMOS, Medium Bias	TLC27M7I	† TI	
			5 *	2.2	5.3	10	70	0	LinCMOS, High Bias	TLC277I	† TI	
	0.003		5	5					Precision FET	OPA2107B	Burr-Brown (3409)	10
0.035	0.002		5	1 *	3 *	250	80	—	Ultra Low Drift BiFET	AD647K	† AD (3339, 3343)	
										AD647S	† AD (3339, 3343)	
										AD647S/883B	† AD	
	0.005 *	5 *	1 *	3 *	300 *	80	0	0	Dual 542	AD642L	† AD (3343)	15
		5	2 *	3 *	250	80	0	0	Dual 544	AD644L	† AD (3343)	
		15	2 *	3 *	250	80	0	0	Dual 544	AD644S	† AD (3343)	
0.1	0.05		5	30	12	50		0	Low Input Offset JFET	MC33282	Motorola	
0.2	0.1		10 *	3	13	50		0	BiFET, General Purpose	TL287I	† TI	
1.5μA	200		3	500	350	40	90	1	Wideband	EL2223	† Elantec	20
										EL2223C	† Elantec	
			20	60	200	6	80	0	Wideband	EL2224	† Elantec	
										EL2224C	† Elantec	
2	0.2		5			80	96		Dual 108 Type	LH2108A	National	
				1 *	0.3 *	40	96	1	Dual 108A	PM2108A	† AD	25
						80	96	1	Dual 108A	LH2108A	† LinearTech	
3	2.8		2	0.6 *	0.17 *	200	110	0	Dual Matched Instrumentation	OP10	† AD (3343)	
										OP10A	† AD (3343)	
4	6		2	0.6 *	0.17 *	200	106	0	Dual Matched Instrumentation	OP10E	† AD (3343)	
7	1		5			80	96		Dual 108 Type	LH2308A	National	30
	6		0.6 *	0.17 *	0.25 *	120	100	0	Dual Matched Instrumentation	OP10C	† AD (3343)	
20	0.1		10	3	13	50	80	0	Bipolar-JFET	TL287C	† TI	
35	15		0.7 *	0.1 *	0.04	500*	88			TLC27L7M	† TI	
			2 *	0.7 *	0.6	280*	88			TLC27M7M	† TI	
			5 *	2.3	4.5	40K*	82			TLC277M	† TI	35
0.5 *	60		5	3.0	1.0		70			TA75557	Toshiba	
										TA75558	Toshiba	
			5	2			70			TA75559	Toshiba	
0.5	60		5	2	1		95			TLE2022C	TI	40
										TLE2022I	TI	
	80	50	2.5	10 *	7	1000	94	0		SSM2139	† AD (3337, 3343, 3354)	
	120	7	3	—	0.2	800	80	0	Low Power, Precision Matched	OP221C	† AD (3337, 3341)	
										OP221G	† AD (3337, 3341)	
	200	20	15	40	400	40	78	1		1493	TeledyneC	45
	5000	700	9	125	50	94				CA3280A	Harris	
0.500	0.02	0.01	2.0	1.0	.45	100	80	0	Low Power, Precision	HA7712B	† Harris	
	25	25	5	8 *	18	1000	80	0	High-Speed, Precision	OP249A	† AD (3337, 3343)	
0.6	40	4	10	100 *	—	500 *	76	0	Low Power, Single/Dual Supply	OP220C	† AD (3338, 3343)	
										OP220G	† AD (3338, 3343)	
0.7	25	25	6	8 *	18	500	80	0	High-Speed, Precision	OP249F	† AD (3337, 3343)	50
	60	5	2 *	2.8 *	0.7	800	91	0	Low Power Precision	TLE2022M	† TI	
0.75	0.008	0.006	6	2 *	2 *	316	90			OPA2111AM	Burr-Brown (3408)	
									Low Noise	OPA2111S	† Burr-Brown (3408)	
	0.2	0.04	10	10 *	50	200	88	0	Fast Settling, Precision	OP42E	† AD (3336)	
	20	20		6.5*	6.5	300	95	0	High speed, low noise.	OP271G	† AD (3335, 3338, 3343)	55
	50	2	8	0.8	0.5	100	90	0	Dual Matched	OP04A	† AD (3340)	
										OP04E	† AD (3340)	
										OP14A	† AD (3340, 3343)	
										OP14E	† AD (3340, 3343)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units											(Cont'd)	
0.75	80	50	2.5	30	15		106		Low Noise, Wideband	HA5222/883 † Harris	(Cont'd)	
0.8	0.0007 *	0.0001 *	1.4 *	0.1 *	0.05 *	50	65	0	LinCMOS, Low Bias Precision	TLC2767M † TI		
	0.075	0.05	12	3.0	8	100	82		High Speed Instrumentation Amplifier	LT1057C LinearTech		
										LT1057M † LinearTech		
1	0.004 *	0.002 *	6 *	2 *	2	30	72	0	J-FET Low Power, High Drive	TLE2062BM † TI		5
	0.01	0.005	10	1	1	300	82		Precision Low Power BiFET	AD648B AD (3339, 3341, 3343)		
										AD648K AD (3339, 3341, 3343)		
										AD648T † AD (3339, 3341, 3343)		
	0.008		10	5	18		80		Precision FET	OPA2107A Burr-Brown (3408, 3410)		
										OPA2107S † Burr-Brown (3408, 3410)		10
0.035	0.005 *		10	1 *	3 *	300 *	80 *	0	Dual 542	AD642K † AD (3343)		
										AD642S † AD (3343)		
				2 *	3 *	250	80	0	Dual 544	AD644K AD (3343)		
0.05	0.025		10	1	1	50	80	0	Low Power BiFET	LF442A National		
	0.03		30	1.6	6	32	95	0		OPA2541B Burr-Brown (3411)		15
										OPA2541S † Burr-Brown (3411)		
0.075	0.005		10	1 *	3 *	100	76	—	Ultra Low Drift BiFET	AD6471 † AD (3339, 3343)		
	0.025		10	3/4	20	200	80		Precision High Speed BiFET	AD712B AD (3337, 3343, 3354)		
				3.4	20	200	80		Precision High Speed BiFET	AD712K AD (3337, 3343, 3354)		
										AD712T † AD (3337, 3343, 3354)		20
0.1	0.05		10	3.0	10	100	80		High Input Impedance Instrumentation Amplifier	LF412AC LinearTech		
							150	100*	High Input Impedance Instrumentation Amplifier	LF412AM † LinearTech		
				13 *	10	150	86	0	Dual JFET	OP215A † AD (3337, 3343)		25
									Precision JFET	OP215E AD (3337, 3343)		
0.2	0.04		10	10 *	45	200	86	0	Fast Settling, Precision	OP42A † AD (3336)		
	0.1		10	3	10	50	80	0	Wideband JFET	LF412A National		
			10 *	3	13	50	0		BiFET, General Purpose	TL2881 † TI		
				8 *	30 *	50	—	0		MC34082A Motorola		30
				16 *	55 *	50	—	—	Decompensated	MC34083A † Motorola		
2	0.8		6	1.8	3.4 *	15	65			TLE2062BC TI		
4	2		6	1.8	3.4 *	15	65			TLE2062BI TI		
20	10			4	9	1			High Speed, Low Power	OP282 AD (3337, 3341)		
40	5		10	0.15 *		300	86 *	0	Micropower, Precision	OP220H AD (3338, 3343)		35
500	600		—	2 *	50 *	20	80	0	Transconductance Amplifier	LM13700A National		
1000	180		2	37	11	150		0	Low Noise	MC33077 Motorola		
1.0	0.001	0.0005 *	0.5 *	1.9 *	2	90	80	0	Low Noise, Precision	TLC2202M † TI		
1.2	0.0007	0.0001	1 *	0.11	0.05	50	65	0	LinCMOS, Low Bias	TLC27L9I TI		
1.5	0.15	0.1	0.7 *	0.1	0.04	500*	88			TLC27L7C † TI		40
			2	0.7	0.6	280*	88			TLC27M7C † TI		
			5 *	2.3	4.5	40	88			TLC277C † TI		
	0.2	0.1	9 *	3 *	13	50	75	0	Bipolar J-FET	TL052M † TI		
			9.7 *	1 *	2	4	70	0	Low Power Bipolar J-FET	TL032M † TI		
500	10		5	70	90	500	100		Wideband, Single Supply	EL2243 † Elantec		45
										EL2243C † Elantec		
2	0.0007	0.0001	1 *	0.11	0.05	50	65	0	LinCMOS, Low Bias	TLC27L4BI † TI		
	0.001 *	0.001 *	0.7 *	—	0.04 *	10	70	0		TLC27L2BC † TI		
			2 *	—	0.6 *	10	70	0	LinCMOS, Medium Bias	TLC27M2BC † TI		
				1 *	0.6 *	30	65	0	LinCMOS, Medium Bias	TS27M2BC † SGS-Thomson		50
			5 *	—	4.5 *	10	70	0		TLC272BC † TI		
			5	3.5 *	5.5 *	10	65	0	LinCMOS, High Bias	TS272BC † SGS-Thomson		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
2	0.001 *	0.005 *	0.7	0.11	0.05	30	70	0	LinCMOS, Low Power, Low Bias Mode	TLC25L2BC	Ti	(Cont'd)
			2	0.635	0.62	20	70	0	LinCMOS, Low Power, Medium Bias Mode	TLC25M2BC	Ti	
	0.01 *	0.7 *	0.1 *	0.04 *	60	65	0		LinCMOS, Low Bias	TS27L2BC	◊ SGS-Thomson	
0.004 *	0.002 *	6 *	2 *	2	30	72	0		J-FET Low Power, High Drive	TLE2062AM	◊† Ti	5
0.005	0.001	0.7 *	0.1	0.5	30	70	0		LinCMOS, Low Bias	TLC27L2BI	◊ Ti	
		2 *	0.6	0.6	20	70	0		LinCMOS, Medium Bias	TLC27M2BI	◊ Ti	
		5	2.2	5.3	10		0		LinCMOS, High Bias	TLC252BC	Ti	
		5 *	2.2	5.3	10	70	0		LinCMOS, High Bias	TLC272BI	◊ Ti	
0.01	0.005	20	60	300	180	80	0			MAX457	Maxim	
0.015	0.012	15	2 *	2 *		82			Low Noise	OPA2111K	Burr-Brown	10
											(3408)	
0.02	0.01	20	1	1	300	76			Precision Low Power BiFET	AD648A	AD (3339, 3341, 3343)	
										AD648J	AD (3339, 3341, 3343)	
										AD648S	† AD (3339, 3341, 3343)	
0.03	0.015	7	0.30	0.01	100	65	0		CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2706A	◊† AdvLinear	15
	0.025	7	0.4	0.7 *	15	65	0		CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2701A	◊† AdvLinear	
0.05	0.03	10 *	1	1.6	80 *	70	0		Low Power, Dual 747	ICL7622AC	Maxim	
										ICL7622AM	† Maxim	
									Low Power, Dual 1458	ICL7621AC	Harris	20
										ICL7621AM	† Harris	
										ICL7621AC	Maxim	
										ICL7621AM	† Maxim	
	0.1	20	3	10	50	80	0		Dual 0351A	LF353A	SGS-Thomson	
0.075	0.075 *	20 *	1 *	3 *	200 *	76 *	0		Dual 542	AD642J	◊ AD (3343)	
			2	3 *	100	76	0		Dual 544	AD644J	AD (3343)	
0.1	0.05	10 *	3 *	13 *	50	80	0		Bipolar-JFET	μA772AC	National	25
										μA772AM	† National	
2	0.2	15			50	85			Dual 108 Type	LH2108	National	
										LH2208	National	
			1 *	0.3 *	50	85	1		Dual 108	PM2108	AD	30
									Dual 108	LH2108	† LinearTech	
	0.8	6	1.8	3.4 *	15	65				TLE2062AC	Ti	
4	2	6	1.8	3.4 *	15	65				TLE2062AI	Ti	
5	0.6	18	50	75		110	0			VA2703	† VTC	
										VA2713	† VTC	
5μA	4μA	10	50	600	2	63	0		Wideband, Current Mode Feedback	EL2232C	◊ Elantec	35
	4μA	10	50	600	2	60	0		Wideband, Current Mode Feedback	EL2232	‡ Elantec	
20	10		4	9	1				Precision, Low Power	OP482	AD (3337, 3340)	
25	25	25	8 *	18	500	76	0		High-Speed, Precision	OP249G	AD (3337, 3343)	
45	5				100	85				IR9358	Sharp	
2 *	45	5	0.6	0.3		60				TA75358	Toshiba	40
2	45	5	20	1	2	25	85			MB47358	◊ Fujitsu	
	50	10	7.0	± 3		90			Dual Power Op Amp	MA912	AnalogSys	
		15	1 *	—	50	70	0		Low Power, Single Supply	CA158A	◊† Harris	
										LM158A	† SGS-Thomson	
75	5	10	0.8	0.5	50	90	0		Dual Matched	OP04C	AD (3340)	45
										OP14	† AD (3343)	
										OP14C	◊ AD (3340, 3343)	
	10	15	0.4	10	25	80				LH2101A	† National	
										LH2201A	National	
			1 *	0.5 *	50	80	1		Dual LM101A High Performance	LH2101A	Raytheon	50
100	20	10	5.7 *	16 *	220	100 *	0		Precision Bipolar-JFET	OP215B	◊† AD (3337, 3343)	
										OP215F	◊ AD (3337, 3343)	
150	30	3 *	1.3 *	2	10	80	0		Low Power	HA5152-2	† Harris	
200	75	3 *	8 *	1	100	86	0		Low Noise, High Performance	HA5102-2	† Harris	
										HA5102-5	◊ Harris	55
			60 *	12	100	86	1		Wideband	HA5112-2	◊† Harris	
										HA5112-5	◊ Harris	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers—Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units												(Cont'd)
2	300	400	15	35	200	2	80		High Speed, Low Power	AD827	AD (3336, 3343)	
	500	10	7	30	40	300	95		Wideband, Single Supply	EL2242	† Elantec	
										EL2242C	◊ Elantec	
		50	10 *	3.5 *	13 *	50	80	1	High Performance, Single Supply	MC33072A	Motorola	5
										MC34072A	Motorola	
										MC35072A	† Motorola	
	750	150	2 *	16 *	5		100 *			MC33078	Motorola	
	800	200	—	10 *	13	50	80	1	Dual 5534	SE5532	† Signetics	
										SE5532A	† Signetics	
	950	100	10	2	50	100	85			LM6118	† National	10
										LM6218A	National	
3	-80	15	7	0.6	0.2	50	70	0	Bipolar, High Gain, Low Power	LM258A	TI	
3 *	0.03	0.005		1	3.5		70			TA75062	Toshiba	
				3	13		70			TA75072	Toshiba	
3	0.03	0.005		3	13	200	76		Precision High Speed BiFET	IR9082	Sharp	15
	0.075	0.025	20	3	20	150	76			AD712A	AD (3337, 3343, 3354)	
										AD712S	† AD (3337, 3343, 3354)	
0.1			10	50	100		60		Video Speed	CA5202	Harris	
0.2				3	13	25		0	BiFET, Low Offset	LF412	TI	
	0.05		10 *	3 *	13 *	50	80	0	Low Noise, Bipolar JFET	TL072BC	◊ SGS-Thomson	20
				4 *	13 *	50	80	0	Low Noise Bipolar-JFET	TL072BC	Motorola	
	0.1		10 *	1 *	3.5 *	4	80	0	Low Noise Bipolar-JFET	TL062BC	◊ TI	
									Low Power, Bipolar JFET	TL062BC	◊ SGS-Thomson	
				2 *	2	4	80	0	Low-Power J-FET	TL062BC	Motorola	25
				3 *	13	50	80	0	Bipolar-JFET	TL082B	◊ SGS-Thomson	
					15 *	50	80	0	Bipolar-JFET	TL082B	Motorola	
										TL082BC	SGS-Thomson	
										TL082BC	◊ TI	
										TL288C	◊ TI	
										TL288M	◊† TI	30
				8 *	30 *	25	—	0		MC34082	Motorola	
				16 *	55 *	25	—	—	Decompensated	MC34083	Motorola	
										MC34083	† Motorola	
			20	0.7	8	25	70	0	Wideband JFET	LF412	National	
				3.0	8	50	82		High Input Impedance Instrumentation Amplifier	OP215C	† LinearTech	35
										OP215G	LinearTech	
5	5	—		1	1	100	100	0	Low Noise	SE5512	† Signetics	
80	15	15				50	50		Selectable gain of 10, 100, 400	LM258A	◊ Samsung	
				1 *	—	50	70	0	Low Power, Single Supply	CA258A	◊ Harris	40
										LM258A	National	
										LM258A	◊ SGS-Thomson	
	30	15	0.44	0.3	50	80	80	0	Dual 741	μA747AM	† National	
										μA747EC	National	
										LM747A	† National	45
										LM747E	National	
100	20	10							Dual Independent Op Amps	SG2101A	† SiliconG	
	30	20	1 *	—	25	65	65	0	Low Power, Single Supply	CA358A	◊ Harris	
										LM358A	National	
		30	—	—	25	65	65	0	Low Power, Single Supply	LM358A	◊ SGS-Thomson	
	200			6		70			Low Noise	MJN2043	NJR	50
150	30	3 *	1.3 *	2	50	80	80	0	Low Power	HA5152-5	Harris	
200	50			4	20	70	70			NJM4565	◊ NJR	
500	50	2	2.5	1.2	50	80	80	0		MC33178	◊ Motorola	
	200			3		70	70		Low Noise	NJM2041	◊ NJR	
750	400	3 *	—	2 *	20	70	70	3	Audio Preamp	μA749C	National	55
1000	200		5.5	7		80	80		Low Noise	NJM2068	◊ NJR (3594)	
5000	700	5 *	9 *	125 *	50	80	80	1	Transconductance Amp	CA3280	◊ Harris	
3.3	0.004	0.002	1.3	1	0.11	300	68			LPC662AI	National	
			1.4	0.6	220	68	68	0		LMC662AI	National	
3.5	0.03	0.03	1.3	1.4	0.5	150	68	0		LMC662AM	† National	60
	0.1	0.1	1.3	1	0.11	250	68			LPC662AM	† National	
	300	50	5 *	1.5	1 *	—	86	0	High Performance	LS204	◊ SGS-Thomson	
(Continued)												

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
3.5	1000		8	90	1000		62	0	Current Feedback Operational Amplifier	OP260A	± AD (3336, 3343)	(Cont'd)
			8	90	1000		62	0	Current Feedback Operational Amplifier	OP260E	AD (3336, 3343)	
3.9	1.8	0.65	20		10	50	76		JFET Input	LF412C	LinearTech	
4	0.004 *	0.002 *	6 *	2 *	2	30	72	0	J-FET Low Power, High Drive	TLE2062M	† TI	5
	0.015	0.01		4	10	14	83			CA5260A	◊ Harris	
	2	0.8	6	1.8	3.4 *	15	65			TLE2062C	TI	10
		1	10 *	3	10 *	25	70	2	Wideband	MC34182	Motorola	
	4	2	6	1.8	3.4 *	15	65			TLE2062I	TI	10
	200	50	20	5.4 *	15 *	200	96 *	0	Precision Bipolar-JFET	OP215C	◊† AD (3337, 3343)	
										OP215G	◊ AD (3337, 3343)	15
	250		10	0.014	0.5		60			PA25A	† Apex (3379)	
	500	75	10 *	4.5 *	13 *	25	70	1	High Performance, Single Supply	MC33072	Motorola	20
										MC34072	Motorola	
										MC35072	† Motorola	25
	600	—	2 *	50 *	20 *	80	0		Transconductance Amplifier	LM13700	† National	
	700	100	25	—	9 *	18	70	0	General Purpose, OC Output	TEC1761M	† SGS-Thomson	30
	800	150	10	9	25	70	0		Low Noise	NE5532	TI	
										NE5532A	TI	35
	1250	200	10	2	50	70	75			LM6218	National	
	1500	300	—	10 *	13 *	25	70	1	Low Noise Dual 5534	BA10358	ROHM (3618)	40
										XR5532	Exar	
										XR5532A	Exar	45
										XR5533	Exar	
										XR5533A	Exar	50
										NE5532	Signetics	
										NE5532A	Signetics	55
										NE5533	† Signetics	
			5		100				Low Noise	BA15532	ROHM (3618)	60
			5 *	10 *	13 *	25	70	3	Can be compensated with 1 capacitor, but reduces BW and slew rate.	NE5533A	Signetics	
	5000	1000			50		80		Transconductance Amp.	NJM13600	NJR	65
										NJM13700	NJR	
	6000	800	10	4.5	200	0.3	74		High Slew Rate	LH4162A	† National	70
4.5	4	2	10 *	3	10 *	25	70	2	Wideband	MC33182	Motorola	
	100	2		1.8	2.1	50	80		Low Power, Single Supply	MC33172	Motorola	75
										MC35172	† Motorola	
5	-100	30	7	0.6	0.2	25	65	0	Bipolar, High Gain, Low Power	LM358A	TI	80
	-150	30	7	0.6	0.2	50	70	0	HighGain, Low Power Bipolar	LM258	TI	
	0.0007	0.0001	1 *	0.11	0.05	50	65	0	LinCMOS, Low Bias	TLC252AC	TI	85
										TLC27L4AI	◊ TI	
	0.001 *	0.001 *	0.7 *	—	0.04 *	10	70	0		TLC27L2AC	◊ TI	90
				0.1 *	0.04 *	60	65	0	LinCMOS, Low Bias	TS27L2AC	◊ SGS-Thomson	
			2 *	—	0.6 *	10	70	0		TLC27M2AC	◊ TI	95
			2	1 *	0.6 *	30	65	0	LinCMOS, Medium Bias	TS27M2AC	◊ SGS-Thomson	
			5 *	—	4.5 *	10	70	0		TLC272AC	◊ TI	100
				3.5 *	5.5 *	10	65	0	LinCMOS, High Bias	TS272AC	◊ SGS-Thomson	
	0.005 *	2	0.635	0.62	20	70	0		LinCMOS, Low Power, Medium Bias Mode	TLC25M2AC	TI	105
	0.005	0.001	0.7 *	0.1	0.05	30		0	LinCMOS, Low Bias	TLC25L2AC	◊ TI	
							70	0	LinCMOS, Low Bias	TLC27L2AI	◊ TI	110
			2 *	0.6	0.6	20	70	0	LinCMOS, Low Bias	TLC27M2AI	◊ TI	
			5 *	2.2	5.3	10	70	0	LinCMOS, High Bias	TLC272AI	◊ TI	115
	0.03	0.005	10	5	13	200	86			MB47082	◊ Fujitsu	
		0.015	7	0.30	0.01	100	65	0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2706B	◊ AdvLinear	120
		0.02		4	10	50	94			CA3260A	Harris	
			6 *	4 *	10 *	50 *	70	0	Dual 3160	CA3260AE	Harris	125
										CA3260AT	† Harris	
	0.025	7	0.4	0.7 *	15	65	0		CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2701B	◊† AdvLinear	130
	0.04	0.02	15 *	45 *	9 *	20	70	0	Dual 3140A, MOS FET	CA3240A	Harris	
	0.05	0.03	15 *	1	1.6	80	70	0	Low Power, Dual 1458	ICL7621BC	Harris	135
										ICL7621BM	† Harris	
										ICL7621BC	Maxim	140
										ICL7621BM	† Maxim	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units (Cont'd)												
5	0.05	0.03	15 *	1	1.6	80	70	0	Low Power, Dual 747	ICL7622BC ICL7622BM	Maxim † Maxim	(Cont'd)
0.1	0.05		10 *	1 *	1 *	25	70	0	Low Power JFET	LF442	National	5
			10	2	0.6	25	70	0	Low Power J-FET Input	LF442C	Motorola	
	0.07		10 *	4 *	13 *	25	80	0	JFET Input	MC34002B	Motorola	5
	0.1		10 *	3 *	13 *	50	80	0	Bipolar JFET	μA772BC μA772BM	National † National	
0.2	0.1		10 *	4 *	13 *	25	70	0	Bipolar-JFET	MC35002B	† Motorola	10
			30	4 *	13 *	50	80	0	Dual 0351B	LF353B	SGS-Thomson	
4	2		10	4	8	25	80		Wide Bandwidth	LF453C	National	10
7.5	3		3 *	1 *	15 *	200	70	0	Multi-Purpose Programmable	μA776M	† National	
10	10		—	1	1	100	100	0	Low Noise	NE5512 NE5517 NE5517A	Signetics Signetics Signetics	15
25	4		15		0.45		80		With Dual Comparators	LM613M	† National	
30	12		20		10	30	80		JFET Input	LF412M	† LinearTech	15
100	25		10	0.8	0.25	50	70	0	Dual Matched	OP04B	† AD (3340)	
			20	0.8	0.25	25	70	0	Dual Matched, High Performance	OP14D	AD (3340, 3343)	20
	40		—	0.8 *	0.5 *	4	60	0	Low Power	TL022M	† TI	
	50		20	0.8	0.25	25	70	0	Dual Matched, High Performance	OP14B	AD (3340, 3343)	25
150	30		7 *	1 *	—	50	70	0	Half LM124	CA158 CA258 LM158 LM158 LM258 LM158 LM158 LM258 SE532 LM158	† Harris Harris † Motorola † National National † SGS-Thomson † Signetics Signetics † Signetics † TI	
			15			50	50		Selectable Gain of 10, 100, 400	LM258	◊ Samsung	30
200	80		—	0.8 *	0.5 *	1	60	0	Low Power	TL022C	TI	35
	100		—		1.2	100	70	0	Single-Supply	NJM3404A	◊ NJR (3594)	
250	50		—	—	—	25	65	0	2 Op Amp/Comparators	LM392	National	35
	80		—	—	0.5		60		Low Power	NJM022	◊ NJR	
			—	0.8 *	0.5 *	1	60	0	Low Power	NJM022B	◊ NJR (3594)	40
500	50		10 *	1 *	0.6 *	50	70	0	Single Supply	IR9022	Sharp	
	200		—	1 *	1.0 *	20	70	0	Dual 741I	MC3558	† Motorola	40
			—	1 *	0.5 *	50	70	0	Dual 741	MC4558I	◊ Samsung	
			—		0.8 *	50	70	0	Dual 741	SFC2747M	† SGS-Thomson	45
			—						Dual 741	LM1458M	† SGS-Thomson	
			1.0	0.5		50	94			LM1558	Harris	45
			1.3	1			80		High Output	NJM3414	◊ NJR	
			—	2	0.8	20	70	0	Low noise	NJM3415	◊ NJR (3594)	50
			—		1.5 *	50	70	0	Dual Wideband 741	LS4558N	† SGS-Thomson	
			—	2.5	1	20	70	0	General Purpose	RM4558	† Raytheon	50
			—	2.5 *	1.5 *	20	70	0	Dual Wideband 741C	RM4558	◊† TI	
			—	2.5	1.5	50	70	0	Dual Wideband 741	SE4558	† Signetics	55
			—		1.5 *	50	70	0	Dual Wideband 741	MC4558	Samsung	
			—						Dual Wideband 741	MC4558	† SGS-Thomson	60
			—						Dual Wideband 741	GL4558	† GoldStar	
			—						Dual Wideband 741	MC4558A	Motorola	65
			—	3	1.5 *	50	70	0	3 MHz Min. Bandwidth	RM4559	† Raytheon	
			—		1.5	50	70	0	3 MHz Min. BW	RM4559	◊† TI	
			2-15 *	1 *	0.5 *	50	70	0	Dual 741	CA1558 CA747 MC1558 MC1747 μA747M LM1558 LM747 RM747 MC1558 MC1558 μA747-1M μA747M MC1558 TA75458	† Harris † Harris † Motorola † Motorola † National † National † National † Raytheon † SGS-Thomson † Signetics ◊† TI ◊† TI ◊† TI Toshiba	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
5	500	200	2-15 *	3 *	0.25	25	70	3	Dual MC1709	MC1537	† Motorola	(Cont'd)
			5						Low Noise	BA15218	ROHM (3618)	
	1000	200	—	0.12	7 *	30	80	0	Low Noise, High Speed	LM833	National	
			2 *	15 *	7 *	25	100 *	0	Low Noise, Audio	LM833	Motorola	
	2000		8	90	1000		62	0	Current Feedback Operational Amplifier	OP260F	AD (3336, 3343)	5
	7000	8000	6000	—	2 *	50	80	0	Transconductance Amplifier	LM13600	National	
	45000	3000	600				80			SG3049	‡ SiliconG	
6	0.2	0.05	10 *	3 *	13 *	35	80	0	Low Noise, Bipolar JFET	TL072M	◊† SGS-Thomson	
						50	80	0	Low Noise, Bipolar JFET	TL072AC	◊ SGS-Thomson	
										TL072I	◊ SGS-Thomson	10
									Low Noise Bipolar-JFET	TL072M	◊† TI	
				4 *	10	35	70	0	Low Noise Bipolar JFET	TL072M	† Motorola	
				13 *	50	80	80	0	Low Noise Bipolar-JFET	TL072AC	Motorola	
										TL072AC	◊ TI	
	0.1		10 *	1	3.5	4	80	0	BiFET, Low Power	TL062I	◊ TI	15
				1 *	3.5 *	4	80	0	Low Power, Bipolar JFET	TL062AC	◊ SGS-Thomson	
										TL062I	◊ SGS-Thomson	
										TL062M	◊† SGS-Thomson	
									Low Power Bipolar-JFET	TL062AC	◊ TI	
										TL062M	◊† TI	20
				2 *	2	4	80	0	Low-Power J-FET	TL062AC	Motorola	
										TL062M	† Motorola	
				3	13	50	80	0	BiFET, General Purpose	TL082I	◊ TI	
									BiFET General Purpose	TL083I	TI	
									BiFET, Low Noise	TL072I	◊ TI	25
				3 *	13 *	50	80	0	Bipolar JFET	XR082	◊ Exar	
										XR082M	◊† Exar	
										XR083	◊ Exar	
										XR083M	◊† Exar	
										TL082A	Motorola	30
										TL082AC	SGS-Thomson	
										TL082I	◊ SGS-Thomson	
										TL082M	◊† SGS-Thomson	
										TL082AC	◊ TI	
										TL082M	◊† TI	35
										TL083AC	TI	
				13	50	80	80	0	Bipolar-JFET	TL082A	◊ SGS-Thomson	
				4 *	13 *	25	80	0	JFET Input	TL082M	† Motorola	
10	6	3 *	1 *	15 *	50	70	75	0	Multi-Purpose Programmable With Dual Comparators	μA776C	National	40
30	5	15		0.45						LM613AI	National	
										LM613I	National	
100	10	3 *	0.4	1	100 *	77	77	0	Ultra-Low Power	HA5142	Harris	
250	50	7 *	1 *	0.6 *	25	65	65	0	Half LM244/324	LM258	Motorola	
										LM358	Motorola	
										NE532	Signetics	45
	75	10 *	1 *	0.6 *	20	70	70	0	Single Supply, I/O Operates to Ground	μA798C	National	
500	120		8	3		70	70		High Current	NJM4556	◊ NJR (3594)	
	200					20	60			MC1458N	◊ Samsung	
							70			NJM4562	◊ NJR	
			—	—	—	20	70	0	General Purpose	IR91458	Sharp	50
				1 *		90				BA715	ROHM	
				2	20	70				NJM4558	◊ NJR (3594)	
										NJM4559	◊ NJR	
				4	20	70				NJM4560	◊ NJR	
				1	0.25	100	70	0		MB3607	◊ Fujitsu	55
			—	1 *	0.5 *	20	70	0	Dual 741C	MC1458	Samsung	
				1	0.5	20	70	0	General Purpose	MC1458	TI	
			—	1 *	0.5 *	20-50	70	0	Dual 741C	XR1458	Exar	
										CA747C	Harris	
										MC1458	Motorola	60
										MC1747C	Motorola	
										μA747C	National	
										LM1458	National	
										LM747C	National	
										RC747	Raytheon	65

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line	
Dual Units										(Cont'd)			
6	500	200	—	1 *	0.5 *	20-50	70	0	Dual 741C	MC1458 μA747C	Signetics TI	(Cont'd)	
						25	70	0	Dual 741	SFC2747C	SGS-Thomson		
					0.8 *	20	70	0	Dual 741	LM1458C	SGS-Thomson		
				1.0	0.5	20	86			LM1458	Harris	5	
			—	2	0.5 *	20	70	0	Dual Wideband 741C	MC4558C	Motorola		
				1		20	70	0	Dual Wideband 741	MC4558C	SGS-Thomson		
						50	70	0	General Purpose	NE4558	Signetics		
				2 *	1.0 *	20	70	0	Dual Wideband 741C	MC4558C	◊ Samsung		
				3 *	1	20	70	0	Low Noise	XR4739	Exar	10	
					1 *	20	70	0	Low Noise	IR94558	Sharp		
					1	20	70	0	Wideband 741	XR4558	◊ Exar		
										RC4558	Raytheon		
										RC4558	TI		
				3	1.5	20	70	0	3 MHz Min. Bandwidth	RC4559	Raytheon	15	
										RC4559	TI		
				6 *	2 *	20	70	0	Low Noise	IR94559	Sharp		
				10 *	2.8 *	20	70	0	Wideband 741	XR4560	Exar		
				15 *	5 *	20	70	0	High Slew Rate	IR3F02	Sharp		
				3		150			Low Noise	BA4558	ROHM (3618)	20	
				6 *	0.8 *	0.3	20	0	Dual 741C	MC1458	◊ SGS-Thomson		
				10 *	1 *	0.5 *	25	0	Automotive Temperature Range (-40°C to 85°C)	SA747C	Signetics		
				12 *	1 *	0.8 *	20	0	Automotive Temperature Range (-40°C to 85°C)	SA1458	Signetics		
650	35	20	100	90	10	70	70	1	High Speed, Fast Settling	MAX428C	◊ Maxim	25	
										MAX428M	† Maxim		
			120	10	40 *	30	4	60	0		VA2705K	VTC	
1000	300	6 *	—	9 *	10	65	0	0	General Purpose, OC Output	TEC1761C	SGS-Thomson		
1500	500	10	1 *	0.5 *	50	70	0	0	Dual 741	μA747	◊† Signetics		
2800	500		41	0.5		86				CA1458	Harris		
6000	800	10	4.5	200	0.3	74			High Slew Rate	LH4162	† National	30	
	1900	10	4.5	200	0.35	70			High Slew Rate	LH4162C	National		
6.3	0.002	0.001	1.3	1.4	0.7	150	62	0		LMC662AC	National		
	0.004	0.002	1.3	1	0.11	200	61			LPC662I	National		
7	-250	50	7 *	0.6	0.2	25	65	0	Low Power, High Gain Bipolar	LM358	TI	35	
			7	0.6	0.2	100 *	50	0	Bipolar, High Gain, Low Power	LM2904	TI		
	40	5	15		0.45	70			With Dual Comparators	LM613C	National		
	200	50	—	—	—	25	65	0	Single Supply	TL321C	TI		
	250	50				25	65		Selectable gain of 10, 100, 400	LM358	◊ Samsung		
						100 *	50			LM2904	◊ Samsung		
						100	85		Single-Supply	NJM2904	◊ NJR (3594)	40	
				1.0		25	88			LM358	Harris		
						100	100			LM2904	Harris		
			7 *	—	—	100 *	50	0	Single Supply	LM2904	SGS-Thomson		
			7	0.2	0.25	25	65	0	Dual Internal Compensation	GL358A	GoldStar		
			7 *	1 *	—	25	65	0	Half LM224	LM358	SGS-Thomson	45	
					0.3 *	25	65	0	Automotive Temperature Range (-40°C to 85°C)	SA532	Signetics		
1200	250		1				100			CA2904	Harris		
3000		8	90	1000			62	0	Current Feedback Operational Amplifier	OP260G	◊ AD (3336, 3343)		
7.5	7	1	15			25	80		Dual 108 Type	LH2308	National	50	
	250	50	30	0.4	10	15	70			LH2301A	National		
	800	300	10	1 *	0.5 *	25	70	0	Dual 741C	μA747C	◊† Signetics		
	1500	500	1.5 *	1 *	0.25 *	15	65	3	Matched Dual MC1709C	MC1437	Motorola		
8	-500	75	10 *	1	0.6	20	70	0	Low Power	TL322I	TI		
	500	75	10 *	1 *	0.6 *	20		0	Split Supplies	MC3358	Motorola		
10	0.0007	0.0001	1 *	0.11	0.05	50	65	0	LinCMOS, Low Bias	TLC27L4I	◊ TI	55	
	0.001	0.001		0.1	0.5		60		Low Voltage	NJU7002	◊ NJR (3595)		
				0.4	0.4		60		Low Voltage	NJU7022	◊ NJR		
				1.5	3.5		60		Low Voltage	NJU7032	◊ NJR		
	0.001 *	0.001 *	0.7 *	—	0.04 *	10	70	0	LinCMOS, Low Bias	TLC27L2M	◊† TI	60	
				0.1 *	0.04 *	60	65	0		TS27L2C	◊ SGS-Thomson		
										TS27L2I	◊ SGS-Thomson		
										TS27L2M	◊† SGS-Thomson		
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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
10	0.001 *	0.001 *	2 *	—	0.6 *	10	70	0	LinCMOS, Medium Bias	TLC27M2M	◊ TI	5
			1 *		0.6 *	30	65	0		TS27M2C	◊ SGS-Thomson	
										TS27M2I	◊ SGS-Thomson	
			5 *	—	4.5 *	10	70	0	LinCMOS, High Bias	TLC272C	◊ TI	10
										TLC272M	◊ TI	
			3.5 *		5.5 *	10	65	0		TS272C	◊ SGS-Thomson	
										TS272I	◊ SGS-Thomson	15
										TS272M	◊ SGS-Thomson	
	0.005 *		0.7	0.11	0.05	30	70	0	LinCMOS, Low Power, Low Bias Mode	TLC25L2C	TI	
			2	0.635	0.62	20	70	0	LinCMOS, Low Power, Medium Bias Mode	TLC25M2C	TI	20
0.005	0.001 *	0.7 *	0.1	0.04 *	20			0	LinCMOS, Low Bias	TLC27L2C	◊ TI	
	0.001	0.7 *	0.1	0.05	30	70		0	LinCMOS, Low Bias	TLC27LI	TI	25
										TLC27L2I	◊ TI	
	0.001 *	2 *	0.6	0.6 *	20			0	LinCMOS, Medium Bias	TLC27M2C	◊ TI	30
	0.001	2 *	0.6	0.6	20	70		0	LinCMOS, Medium Bias	TLC27M2I	◊ TI	
		5 *	2.2	5.3	10	70		0	LinCMOS, High Bias	TLC272I	◊ TI	
0.03	0.015	7	0.30	0.01	100	65		0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2706	◊ AdvLinear	35
	0.03	7	0.7 *	0.7 *	10	60		0	CMOS, Rail to Rail, Single/Dual 5V Supply	ALD4701	◊ AdvLinear	
0.05	0.03	7	0.7 *	0.7 *	10	60	0.0		CMOS, Rail to Rail, Single/Dual 5V Supply	ALD2701	◊ AdvLinear	40
		40	1.6	6		95	0			OPA2541A	◊ Burr-Brown	
										(3411)		
0.1	0.03	10	3	10	40	90	1		JFET Input	MA336	AnalogSys	45
	0.1	10 *	4 *	13 *	25		0		JFET Input	MC35002	† Motorola	
						80	0		JFET Input	MC34002	Motorola	
0.2			3	13	25		0		BIFET, General Purpose	LF353	TI	50
	0.05		13	3	70				J-FET input	NJM072B	NJR	
		10 *	4 *	13 *	25	70	0		Low Noise Bipolar-FET	TL072C	Motorola	55
										TL072C	SGS-Thomson	
										TL072C	◊ TI	
										TC072	Toshiba	60
						50	80	0	Low Noise Bipolar-JFET	TL072BC	◊ TI	
	0.1	10 *	3 *	13 *	50	70	0		Bipolar JFET	μA772C	National	65
			4 *	13 *	25	70	0		Dual 351	LF353	SGS-Thomson	
									Dual 351, Wide Band	LF353	Motorola	
										LF353	National	70
	0.05			20	3	70			J-FET Input	NJM072	◊ NJR	
0.4	0.2			20		70			J-FET	NJM2082	◊ NJR	75
500	50	7	1	0.6	20		0		Low Crossover Distortion	MC3458	Motorola	
		10 *	1 *	0.6 *	20	70	0		Low Power	IR3F01	Sharp	
		75	10 *	1 *	0.6 *	20	70	0	Low Power	TL322C	TI	80
650	120		500	150 *	10	60	0			VA2707J	VTC	
700	50	20	40 *	150 *	10	58				VA2707	VTC	85
	300	—	1 *	0.5 *	20	60	0		Dual 741C	MC1458C	◊ Samsung	
		6 *	0.8 *	0.3	20	60	0		Dual 741C	MC1458C	◊ SGS-Thomson	90
		15 *	1.1 *	0.5 *	20	60	0		General Purpose	MC1458C	Motorola	
1000		15 *	0.014	0.5		60				PA25	† Apex	95
	100	15 *	0.8 *	0.8 *	100	60	0		± 3.5A Peak Output	ULN3755	Allegro Micro	
				5	100 *	60	2		± 3.5 A Peak Output	ULN3753	Allegro Micro	
12	650	120	20	40 *	30	2	60	0	Low Noise	VA2705J	VTC	100
	1000	400	5		150					BA4560	ROHM	
										BA4561	ROHM	
15	0.015	0.01	4	10	10	80			Low Power	CA5260	Harris	105
	0.05	0.03	25 *	0.48 *	0.16 *	10	70	0		ICL7621DM	† Maxim	
			1 *	1.6	80 *	70	0			ICL7621DC	◊ Harris	
										ICL7621DC	Maxim	110
									Low Power, Dual 747	ICL7622DC	Maxim	
	0.2	0.1	10 *	3 *	13 *	50	70	0	Bipolar JFET	μA772LC	National	115
		0.2	10 *	2 *	2	3	70	0	Low-Power J-FET	TL062C	Motorola	
0.4	0.2			3.5	3	70			J-FET Input	NJM062	◊ NJR	
				13	3	70			J-FET Input	NJM082B	NJR	120
				20	3	70			J-FET Input	NJM082	◊ NJR	
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Dual Units										(Cont'd)		
15	0.4	0.2	10 *	1 *	3.5 *	3	70	0	Low Power Bipolar-JFET	TL062C TL062C	SGS-Thomson TI	5
				3 *	13 *	25	70	0	Bipolar-JFET	XR082C XR083C TL082C	Exar Exar Motorola	
					13	25	70	0	Bipolar-JFET	TL082	SGS-Thomson	
					13 *	25	70	0	Bipolar-JFET	TL082C TL082C TL083C TC082	SGS-Thomson TI TI Toshiba	
				4 *	13 *	25	70	0	Bipolar-JFET	TL082C	National	
	700	50	33	40 *	38	2	58	0		VA2706K	VTC	10
15 *	2500	250	—	0.35 *	1 *	3 *	70 *	0	Output current to 1A	L272 L272M	SGS-Thomson SGS-Thomson	
19	650	120		110	100	5	60	2		VA2708	† VTC	15
20	0.05 850	0.1 100	15 * 40	0.5 40 *	0.6 38	2 1	45 58	0	Low Power	HI8575 VA2706J	† Hit VTC	
75	10 30	5 10	1.3 1.3	1.5 8	0.3 2.7	400 500	100 104		Dual Low Noise Dual Low Noise	RC4207F RC4227F	Raytheon Raytheon	20
150	20 50	10 15	0.7 * 0.4 *	1.5 8	0.3 2.7	250 400	94 100		Dual Low Noise Dual Low Noise	RC4207G RC4227G	Raytheon Raytheon	
300	0.010			1	1.8 *		86		Precision Low-Power BiFET	AD648C	AD (3339, 3341, 3343)	
410	0.2	0.1	10		13	425	70		J-FET Input	NJM353	TI NJR (3594)	
Triple Units												
5	0.05	0.03	10 *	1	1.6	80 *	70	0	Low Power	ICL7631BC ICL7631BM ICL7631BC ICL7631BM	Harris † Harris Maxim Maxim	25
								1	Low Power	ICL7632BC ICL7632BM	Maxim Maxim	
7	150	50		1 *	0.3	20	70	0	Micropower	CA144	Newbridge	30
10	0.05	0.03	20 *	1	1.6	80	70	0	Low Power	ICL7631CC ICL7631CM ICL7631CC ICL7631CM	Harris † Harris Maxim Maxim	
								1	Low Power	ICL7632CC ICL7632CM	Maxim Maxim	35
20	0.05	0.03	30 *	1	1.6	80	70	0	Low Power	ICL7631EC ICL7631EC	Harris Maxim	
								1	Low Power	ICL7632EC	Maxim	
				1.4 *	1.6 *	10	70	0	CMOS, Low Power, Programmable Bias	ICL7631EM ICL7632EM	Maxim Maxim	40
Quad Units												
—	200			2.5	0.5	1.2		0	Single Supply, Bipolar Norton Amplifier	LM3900	TI	
.750	10	10	5.0	.5	.15	1		00	0	HA5234	TI Harris	
0.015	0.05 0.09	0.1 0.02	0.15 0.15	0.8 1.5	2 2.5	1000 500	120 110	0	CMOS, Chopper Stabilized Auto-Zeroed	TSC904C TSC914A TSC914AC	TeledyneC (3713) TeledyneC (3713) TeledyneC (3713)	45
0.03	0.12	0.04	0.25	1.5	2.5	300	100	0	Auto-Zeroed	TSC914B TSC914BC	TeledyneC (3713) TeledyneC (3713)	
0.1	1.0	0.2		1.0	0.3	2000	115			OP400A OP400E	Maxim AD (3338, 3341) AD (3338, 3341)	50
	5	0.25	2.2		0.13	70	87 105 90			LT1179AM LT1179AC	LinearTech LinearTech	
	25	25	1.2	4	0.75	1500	115	0	Precision, Wideband	HA5134A	Maxim Harris	
0.12	8	0.25	1.8	0.2	0.04	20	97	0	Single Supply	LT1079AC LT1079AM	LinearTech LinearTech	55

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‡ High Rad Resistance

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
0.15	3	1	1.2		0.1	2000	120	0	Low Offset, Low Power	OP400/883 † AD (3338)		
	6	0.35	3		0.13	55	84			LT1179M † LinearTech		
						80	86			LT1179C † LinearTech		
	10	0.35	2.5	0.2	0.04	20	94	0	Single Supply	LT1079C † LinearTech		5
										LT1079M † LinearTech		
0.18	20	0.8	2	1 *	0.2	1500	100	0	Precision	LT1014AC † LinearTech		
										LT1014AM † LinearTech		
0.2	50	50	2	4	0.75	1200	100	0	Precision, Low Noise	HA5134 ♦† Harris (3508)		
0.25	20	20	10	0.3	0.2	1	80	0	Instrumentation Amplifier	INA258W ♦† Burr-Brown		10
			15	0.3	0.2	1	80	0	Instrumentation Amplifier	INA258V ♦† Burr-Brown		
			45	0.3	0.2	1	80	0	Instrumentation Amplifier	INA258U ♦† Burr-Brown		
0.3	3.0	0.5		1.0	0.3	1000	115			OP400B † AD (3338, 3341)		
										OP400F AD (3338, 3341)		
	7.0	3.5	2.5	1	0.3	7000	110	0	Low-Offset, Low Power Op Amp	OP400G ♦ AD (3338, 3341)		15
	30	1.5	2.5	1 *	0.2	1200	97	0	Precision	LT1014C † LinearTech		
										LT1014M † LinearTech		
	1000	200	15	10		100	80		Low Noise	LM837 † National		
0.4	25	10	2		1.4	1000	110			OP470A † AD (3339, 3342)		
										OP470E AD (3339, 3342)		
0.45	0.05	0.04	10	3.5	10	150	84			LT1058AC † LinearTech		20
										LT1058AM † LinearTech		
0.5		0.15	20	4	20					AD713 AD (3337, 3342, 3354)		
	0.1	0.05	5	30	12	50		0	Low Input Offset JFET	MC33284 † Motorola		
	10	5		3	3	100			Single-Supply	OP492 † AD		
	15	3	5	0.02	0.005	700	90	0	Low Voltage	OP490E AD (3337, 3341)		25
										OP490A † AD (3337, 3341)		
	50	4	2	2.8 *	0.8 *		97			TLE2024BC † TI		
										TLE2024BI † TI		
	80	100	10	20	8			0		VA4701J † VTC		30
				90	40			0		VA4711J † VTC		
	300	20	10	1.5	0.7	100	100	0	Symmetrical, Matched	OP09A ♦† AD (3340)		
										OP09E AD (3340)		
										OP11A ♦† AD (3340, 3342)		
										OP11E AD (3340, 3342)		
	1000		9	200	450	0.97		0	Low Power Video Amplifier	CLC114 † Comlinear		35
0.7	50	4	2 *	2.8 *	0.7	1000	93	0	Low Power Precision	TLE2024BM † TI		
0.75	20	5	4 *	0.02	0.005	500	80	0		OP490F AD (3337, 3342)		
	55	5	2	2.8 *	0.8 *		94			TLE2024AC † TI		
										TLE2024AI † TI		
0.8	0.075	0.05	15	3.0	8	100	80			LT1058C † LinearTech		40
										LT1058M † LinearTech		
	25	10	4	6.5 *	6.5	500	105	0	Low Noise	OP471A † AD (3335)		
										OP471E AD (3335, 3339, 3342)		
	50	20	4		1.4	800	100			OP470F AD (3339, 3342)		
0.95	55	5	2 *	2.8 *	0.7	800	90	0	Low Power Precision	TLE2024AM ♦† TI		45
1	1μA	500	10	200	350	40	80	1	Wideband	EL2423 † Elantec		
										EL2423C † Elantec		
	10	2		20	20	50	80		Includes Multiplexer	SP2400 † Sipex-HSD		
	25	5	4 *	0.02	0.005	400	80	0		OP490G AD (3337, 3341)		50
	60	6	2	2.8 *	0.8 *		92			TLE2024C † TI		
										TLE2024I † TI		
			10	5		100	100	100		BA14741A † ROHM (3618)		
			15		0.9	40	75			LM614AI † National		
										LM614I † National		
1.2	0.0007	0.0001	1 *	0.11	0.05	50	65	0	LinCMOS, Low Bias	TLC27L9C † TI		55
	0.0007 *	0.0001 *	1.4 *	0.11	0.05 *	50	65	0	LinCMOS, Low Bias Precision	TLC2769M ♦† TI		
	0.0007	0.0001	2 *	2.2	5.3	10	70	0	LinCMOS, High Bias	TLC279C † TI		
										TLC279I † TI		
										TLC279M † TI		
			2.1 *	0.635	0.62	25	65	0	LinCMOS, Medium Bias	TLC27M9C † TI		60
	0.0007 *	0.0001 *	2.1	0.635	0.62	25	65	0	LinCMOS, Precision, Medium Bias Mode	TLC27M9I † TI		
	60	6	2 *	2.8 *	0.7	400	88	0	Low Power Precision	TLE2024M ♦† TI		

† Mil Temp Range (-55° to 125°C)

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
1.5	50	20	7	6.5 *	6.5	300	95	0	Low Noise	OP471F	AD (3335, 3339, 3342)	
2	0.0007	0.0001	1 *	0.1	0.04	50	65	0	LinCMOS, Low Input Offset and Bias Currents	TLC27L4BC	TI	5
			2 *	2.2	5.3	10	70	0	LinCMOS, High Bias	TLC274BI	TI	
	0.0007 *	0.0001 *	2.1	0.635	0.62	25	65	0	LinCMOS, Precision, Medium Bias Mode	TLC27M4BI	TI	10
	0.001 *	0.001 *	0.7 *	0.1 *	0.04 *	60	65	0	LinCMOS, Low Bias	TS27L4BC	SGS-Thomson	
	0.001	0.001	0.7 *	0.1	0.05	30	70	0	LinCMOS, Low Bias	TLC27L4BI	TI	15
	0.001 *	0.001 *	1	0.1	0.04	30	77	0	LinCMOS, Low Power, Low Bias Mode	TLC25L4BC	TI	
			2 *	1 *	0.6 *	30	65	0	LinCMOS, Medium Bias	TS27M4BC	SGS-Thomson	20
	0.001	0.001	5	2.3	4.5	10	77	0	Low Input Offset and Bias Currents Low Input Offset and Bias Currents, VDD = 1 to 16 V	TLC274BC	TI	
										TLC254BC	TI	25
	0.001 *	0.001 *	5 *	3.5 *	5.5 *	10	65	0	LinCMOS, High Bias	TS274BC	SGS-Thomson	
	0.004 *	0.002 *	6 *	2 *	2.6 *	30	72	0	J-FET Low Power, High Drive	TLE2064BM	TI	30
										† TI		
	0.02	0.02	7	0.2	0.17	300	65	0	Rail-to-Rail, CMOS, Micropower	ALD4706A	AdvLinear	35
	0.03	0.025	7	0.4	0.7 *	15	65	0	CMOS, Rail-to-Rail	ALD4701A	AdvLinear	
2	2	2	10 *	4 *	13 *	50	80	0	High Speed, JFET Input	TDB0347A	SGS-Thomson	40
	2	0.8	6	1.8 *	3.4 *		65			TLE2064BC	TI	
4			10	450	2000	0.98		0	Closed Loop Buffer	CLC115	Comlinear	45
			6	1.8 *	3.4 *		65			TLE2064BI	TI	
2 *	11 *	0.3 *	15	2	0.45	40	80		With Adjustable Reference	LM614AC	National	50
										LM614AM	† National	
										LM614C	National	55
										LM614M	† National	
2	30	5			0.6		85		Single Power Supply	M5223	TI	60
										M5224	TI	
					2		76		Low Noise	M5128A	Mitsubishi	65
									Low Noise Bi-FET	M5238	TI	
	45	5	5	100	100	100				BA10324	ROHM	70
	50	10	7 *	1 *	—	50	70	0	Low Power	LM124A	† SGS-Thomson	
			20	1 *	—	50	70	0	Low Power	LM124A	† National	75
	80	15	7 *	1 *	—	50	70	0	Low Power	LM224A	SGS-Thomson	
	400	200	5	5.5	3.0	25	100	0	± 5 V power supplies.	VA4741	† VTC	80
										VA4742	† VTC	
	500	50	10 *	3 *	8	50	80	0	High Performance Bipolar	MC33074A	Motorola	85
										MC34074A	Motorola	
										MC35074A	† Motorola	90
	1500		20	160	1500	1 to 10	50	0	Wideband	CLC415	† Comlinear	
2.5	20	1.5	10	0.15	0.05	600000	83	0	Micropower	OP420F	† AD (3337, 3341)	95
				0.15 *	0.05 *	6000000	83	0	Micropower	OP420B	† AD (3337, 3341)	
	50	5	10	750 *	0.25 *	400 *	100	0	Quad Micropower OP-21	OP421B	† AD (3341)	100
										OP421F	AD (3337, 3341)	
	75	10		0.8 *	0.4 *	50	80	0	Quad 741	PM148	AD (3342)	105
										PM248	AD (3342)	
	200	40	5 *	1.8	0.8	30	90	0	High Performance	LS404	SGS-Thomson	110
		75	3 *	8 *	1	100	86	0	Low Noise, High Performance	HA5104-2	† Harris	
										HA5104-5	TI	115
				60 *	12	100	86	1	Wideband	HA5114-2	† Harris	120
										HA5114-5	TI	
	500	50	15	1.5	0.7	100	100	0	Symmetrical, Matched	OP09B	† AD (3340)	125
										OP09F	AD (3340)	
										OP11B	† AD (3340, 3342)	130
										OP11F	AD (3340, 3342)	
	750	150	2 *	16 *	5		100 *			MC33079	Motorola	135
3	-100	30	—	0.6	0.3	25	65	0	Bipolar, General Purpose	LM324A	TI	140
				1	3.5		70			TA75064	Toshiba	
	0.03	0.005		3	13		70			TA75074	Toshiba	145
						200	76			IR9084	Sharp	
	0.2	0.05	10 *	4 *	13 *	25	70	0	Low Noise Bipolar-JFET	TL074BC	TI	150
		0.1	10 *	1 *	3.5 *	4	80	0	Low Power Bipolar-JFET	TL064BC	TI	
						44	80	0	Low Power, Bipolar JFET	TL064BC	SGS-Thomson	155
				2 *	2	4	80	0	Low-Power J-FET	TL064BC	Motorola	160
				3 *	3	50	80	0	JFET	TL084B	SGS-Thomson	
												165

† Mil Temp Range (-55° to 125°C)

* High Rad Resistance

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
3	0.2	0.1	10 *	3 *	3	50	80	0	JFET	TL084BC TL084BC	SGS-Thomson TI	(Cont'd)
80	15	20	1 *	—	—	50	70	0	Low Power	LM224A	National	5
100	30	30	—	—	—	25	65	0	High Gain, Single Supply	LM324A	◊ Samsung	
			1 *	—	—	100	65	0	Low Power	LM324A	SGS-Thomson	
						25	65	0		LM324A	National	
200	20	30	5 *	2.5	0.5	1.	80	0	Norton Amplifier, Bipolar	LM2900	◊ TI	
				3	1.2	25	80	0	Noise 2μV Max	RM4156	† Raytheon	10
					1.6 *	50	80	0	Quad 741	XR4741M	◊† Exar	
				3.5 *	1.6 *	50	80	0	Quad 741	HA4741	◊† Harris	
										RC4741	† Raytheon	
										RM4741-2	† Raytheon	
				19 *	8 *	25	80	0	Uncompensated 4156	RC4157	Raytheon	15
										RM4157	† Raytheon	
250	50	3 *	1.3	6 *	100	80	0	Low Power	HA5154	Harris		
500	50	2	2.5	1.2	50	80	0		MC33179	◊ Motorola		
1000	300		0.6	1	40			General Purpose, Radiation Hardened	HS5104RH	‡ Harris		
3.3	0.004	0.002	1.3		0.11	300	68			LPC660AI	National	20
				1.4	0.6	440	68			LMC660AI	National	
3.5	0.1	0.1	1.3		0.11	250	68			LPC660AM	† National	
					0.5	300	68			LMC660AM	† National	
20	4	25	0.79	0.55	100000	85	0	Includes Voltage Reference	TDC4614	◊† TRWLSI		
4	0.004 *	0.002 *	6 *	2 *	2.6 *	30	72	0	J-FET Low Power, High Drive	TLE2064AM	◊† TI	25
0.2	0.1	10.9 *	1.1 *	2	4	70	0	Low Power Bipolar J-FET	TL034M	◊† TI		
		20 *	2.7 *	10	50	75	0	Bipolar J-FET	TL054M	◊† TI		
2	0.8	6	1.8 *	3.4 *		65			TLE2064AC	TI		
4	2	6	1.8 *	3.4 *		65			TLE2064AI	TI		
125	12	15	750 *	0.25 *	200	96 *	0	Quad, Micropower OP-21	OP421C	† AD (3337, 3341)	30	
									OP421G	AD (3337, 3341)		
4.0	30	2.5	15	0.15*	0.05	400000	80	0	Micropower	OP420G	‡ AD (3337, 3342)	
4.5	100	2		1.8	2.1	50	80		Low Power, Single Supply	MC33174	Motorola	35
										MC35174	† Motorola	
	500	75	10 *	3 *	10	25	70	0	High Performance Bipolar	MC33074	Motorola	
										MC34074	† Motorola	
										MC35074	Motorola	
5	-150	30		0.6	0.3	50	70	0	Bipolar, General Purpose	LM224	TI	40
0.0007	0.0001	2 *	2.2	5.3	10	70	0	LinCMOS, High Bias	TLC274AI	◊ TI		
		2.1 *	0.635	.62	25	65	0	LinCMOS, Medium Bias	TLC27M4AC	◊ TI		
0.0007 *	0.0001 *	2.1	0.635	0.62	25	65	0	LinCMOS, Precision, Medium Bias Mode	TLC27M4AI	TI		
0.001	0.001	0.7	0.1	0.04	20	77	0	Low Input Offset and Bias Currents	TLC27L4AC	◊ TI		
								Low Input Offset and Bias Currents, VDD = 1 to 16 V	TLC25L4AC	◊ TI	45	
0.001 *	0.001 *	0.7 *	0.1 *	0.04 *	60	65	0	LinCMOS, Low Bias	TS27L4AC	◊ SGS-Thomson		
0.001	0.001	0.7 *	0.1	0.05	30	70	0	LinCMOS, Low Bias	TLC27L4AI	◊ TI		
		2	0.7	0.6	20	77	0	Low Input Offset and Bias Currents	TLC27M4BC	◊ TI		
								Low Input Offset and Bias Currents, VDD = 1 to 16 V	TLC25M4BC	TI		
0.001 *	0.001 *	2 *	1 *	0.6 *	30	65	0	LinCMOS, Medium Bias	TS27M4AC	◊ SGS-Thomson	50	
0.001	0.001	5	2.3	4.5	10	70	0	Low Input Offset and Bias Currents	TLC274AM	◊† TI		
						77	0	Low Input Offset and Bias Currents	TLC274AC	◊ TI		
								Low Input Offset and Bias Currents, VDD = 1 to 16 V	TLC254AC	TI		
0.001 *	0.001 *	5 *	3.5 *	5.5 *	10	65	0	LinCMOS, High Bias	TS274AC	◊ SGS-Thomson		
0.005			0.1	0.05				LinCMOS, Low Bias	TLC27L9I	TI	55	
	0.001	2 *	0.6	0.6	20	70	0	LinCMOS, Medium Bias	TLC25M4AC	TI		
0.02	0.02	7	0.2	0.1	300	65	0	Rail-to-Rail Micropower	ALD4706B	◊† AdvLinear		
0.03	0.025	7	0.4	0.7 *	15	65	0	CMOS, Rail-to-Rail	ALD4701B	◊† AdvLinear		
0.05	0.03	10 *	1	1.6	80 *	70	0	High Bias	ICL7641BC	◊ Maxim		
		15 *	1	1.6	80	70	0	Low Power	ICL7641BC	Harris	60	
									ICL7641BM	† Harris		
									ICL7642BC	Harris		
									ICL7642BM	† Harris		
									ICL7642BC	◊ Maxim		
									ICL7642BM	◊† Maxim		
				1.4 *	1.6 *	20	76	0	High Bias	ICL7641BM	◊† Maxim	(Continued)

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

◊ Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
5	0.05										(Cont'd)	
		0.05	10	1	1	50	80	0	Low Power BIFET	LF444A	National	
	0.1	0.05	10 *	4 *	13 *	50	80	0	Precision BIFET	MC35004B	† Motorola	
		0.1	10 *	3 *	13 *	50	80	0	Bipolar JFET	μA774BC	National	
										μA774BM	† National	
	0.2	0.05	10 *	10 *	40 *	50		0	High Speed, JFET Input	MC34084A	Motorola	5
									High-Speed, JFET Input	MC35084A	† Motorola	
				20 *	80 *	50		0	Decompensated MC34084 for Gain >2	MC34085A	Motorola	
									Decompensated MC35084 for Gain >2	MC35085A	† Motorola	
	0.1		10	3	13	50	80	0	BIFET, High Performance	LF347B	Ti	
			10 *	4 *	13 *	50	80	0	Precision BIFET	MC34004B	Motorola	10
									Wideband, Quad 351B	LF347B	Motorola	
										LF347B	National	
	4		10 *	4 *	13 *	50	80	0	High Speed, JFET Input	TDB0347B	SGS-Thomson	
100	20	—	—	0.8	0.4 *	1000	70	0	High Gain, Programmable	LM146	† SGS-Thomson	
	25	—	—	1 *	0.5 *	50	70	0	High Gain, Programmable	LM148	† SGS-Thomson	15
										TDC0149	† SGS-Thomson	
									Quad 741 with Standard npn Input Stage	LM148	‡ National	
										LM148	† Raytheon	
										LM148	♦† Ti	
				4 *	2 *	50	70	0	Wideband Quad 741 for Gains >5	LM149	‡ National	20
	40	—	—	0.8 *	0.5 *	4	60	0	Low Power	TL044M	† Ti	
150	30	7 *	—	—	—	100	70	0	High Gain, Single Supply	LM124	† SGS-Thomson	
			1 *	—	—	50	70	0	Low Power	LM224	♦ SGS-Thomson	
									Low Power, Single Supply	LM258	♦ SGS-Thomson	
	100		0.6 *	0.3 *	50	70	0	0	Bipolar General Purpose	LM124	♦† Ti	25
200	100	—	—	0.8 *	1.2	100	70	0	Single-Supply	NJM3403A	♦ NJR (3594)	
250	80	—	—	0.8 *	0.5 *	1	60	0	Low Power	TL044C	Ti	
300	50	5 *	3	1.2	25	80	0	0	Single-Supply	NJM4741	♦ NJR	
			3.5 *	1.6 *	25	80	0	0	Noise 2 μV Max	RC4156	Raytheon	
						25	80	0	Quad 741	XR4741C	♦ Exar	30
500	50	—	—	2 *	1.6 *	20	70	0	Low Noise, Low Power	XR4212M	† Exar	
		7 *	1 *	0.6 *	50	70	0	0	Low Power	MC3503	† SGS-Thomson	
		10	—	0.6 *	50	70	0	0		LM3503	† National	
		10 *	1 *	0.6 *	—	70	0	0	Low Power, Single Supply	TDC3403	† SGS-Thomson	
		10	1	0.6	200	90	0	0	Low Power	MC3503	Signetics	35
	200	—	3 *	1.5 *	50	70	0	0	Quad 741, High Gain	XR4136M	♦† Exar	
										μA4136M	† National	
										RM4136	† Raytheon	
									Quad 747, High Gain	RM4136	♦† Ti	
			3.5	1.5	96	110	0	0	Programmable	TAB1042	GEC Plessey	40
										TAB1043	♦ GEC Plessey	
			4 *	1.5	0.7	50	70	0	Quad Matched 741	OP11C	† AD (3340, 3342)	
										OP11G	AD (3340, 3342)	
			15 *	1	0.5 *	50	70	0	Quad 741	MC4741	† Motorola	
2000	150		1				94			CA124	Harris	45
6	0.004 *	0.002 *	6 *	2 *	2.6 *	30	72	0	J-FET Low Power, High Drive	TL2064M	♦† Ti	
	0.2	0.05	10 *	3 *	13 *	35	80	0	Low Noise, Bipolar JFET	TL074M	♦† SGS-Thomson	
						50	80	0	Low Noise, Bipolar JFET	TL074I	♦ SGS-Thomson	
									Low Noise Bipolar-JFET	TL074M	♦† Ti	
				4 *	13 *	25	70	0	Low Noise Bipolar-JFET	TL074AC	♦ Ti	50
						50	80	0	Low Noise Bipolar JFET	TL074BC	Motorola	
										TL074BC	SGS-Thomson	
									Low Noise Bipolar-JFET	TL074AC	Motorola	
										TL074AC	SGS-Thomson	
	0.1		10 *	1	2.5	4	80	0	BIFET, Low Noise	TL064I	♦ Ti	55
				1 *	3.5 *	4	80	0	Low Power, Bipolar JFET	TL064AC	♦ SGS-Thomson	
										TL064I	♦ SGS-Thomson	
										TL064M	♦† SGS-Thomson	
									Low Power Bipolar-JFET	TL064AC	♦ Ti	
				2 *	2	4	80	0	Low-Power J-FET	TL064AC	Motorola	60
										TL064M	† Motorola	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
6	0.2	0.1	10 *									
				3	13	50	80	0	BiFET, General Purpose	TL084I TL084I	TI TI	
									BiFET, Low Noise	TL074I	◊ TI	
				3 *	13 *	50	80	0	Bipolar JFET	XR084 XR084M TL084A TL084A TL084I TL084M TL084AC TL084M	Exar † Exar Motorola SGS-Thomson ◊ SGS-Thomson ◊† SGS-Thomson TI † TI	5 10
									Indiv. Program	XR096 XR096M	Exar † Exar	
									Programmable, Bipolar - JFET	XR094 XR094M XR095 XR095M	Exar † Exar Exar † Exar	15
2	0.8	6	1.8 *	3.4 *		65				TL2064C	TI	
4	2	6	1.8 *	3.4 *		65				TL2064I	TI	
100	10	3 *	0.4	1.5	100 *	77	0		Ultra-Low Power	HA5144	Harris	20
200	0.1	10 *	3 *	13 *	50	80	0		High Speed, JFET Input	TL084AC	SGS-Thomson	
	50	—	1	0.5	25	70	0		Bipolar, Low Power, Precision μA741	MC3403	TI	
									Bipolar, Precision (u)A741	LM348	TI	
				1 *	0.5 *	25	70	0	High Gain, Programmable	LM348 TDB0149	SGS-Thomson SGS-Thomson	25
									Quad 741 with Standard npn Input Stage	GL348 LM248 LM348 μA248C LM248 LM348	GoldStar Motorola Motorola National National National	30
				1.0 *	0.5 *	25	70	0	Quad 741	LM348	◊ Samsung	
				—	4 *	2 *	25	0	Wideband Quad for Gains > 5	LM349	National	
250	20	25	750 *	0.25 *	200 *	90 *	0		Quad OP-21	OP421H	AD (3337, 3341)	
	100	—	0.5	0.4 *	1000	70	0		High Gain, Programmable	LM346	SGS-Thomson	35
500	50	—	1 *	1.2 *	25	70	0		LM324 with Improved Output	RC3403A	◊† Raytheon	
			2	1.6	5	70	0		Quad 741	XR4212C	Exar	
	100	—	1	0.4 *	20	70	0		346 with Separate Bias Resistor for each pair	XR346-2 NJM2058 NJM2059	Exar ◊ NJR ◊ NJR	(3594) 40
	200			1	20	70						
				2	20	70						
				1 *	0.5 *	20	70	0	Quad 741	MC4741C	Motorola	
				3 *	1 *	20	60-70	0	Quad 741	XR4136C μA4136C RC4136	◊ Exar National Raytheon	
				3	1.7	20	70	0	High Performance Quad μA741	RC4136	TI	45
				2	20	70	0		High Performance Bipolar	TL136C	TI	
				10	4	20	70			NJM2060	◊ NJR	(3594)
				10	1	15	70			LM4136	National	
650	35	20	100	90	10	70	1		High Speed, Fast Settling	MAX448C MAX448M	◊ Maxim † Maxim	50
	120	10	40 *	30	4	60	0			VA4705K	VTC	
6.0	40	6.0	25	0.15*	0.05	200000	76	0	Micropower	OP420H	◊† AD (3337, 3341)	
6.3	0.002	0.001	1.3	1.4	0.7	300	62			LMC660C	National	
	0.004	0.002	1.3		0.11	200	61			LPC660I	National	
7												
	-250	50		0.6	0.3	25	65	0	Quad Internal Compensation	GL324A	GoldStar	55
						25	65	0	General Purpose	LM324	TI	
						100	50	0	Extended Temperature Range LM324	LM2902	TI	
8	2	7 *	0.1	0.05	60	75	0		Wide Supply Range	LP124	National	
150	30	—	—	—	20	60	0		Single Supply	TA75902	Toshiba	
250	50				13	3	65		Single-Supply	NJM324	◊ NJR	60
					1	100	85			MB3614 MB3615	◊ Fujitsu ◊ Fujitsu	
					1.0	20	86			LM324	Harris	
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units										(Cont'd)		
7	250	50	7 *	—	—	100 *	50	0	Single Supply High Gain, Single Supply	LM2902	SGS-Thomson	5
										LM324	SGS-Thomson	
										SA534	Signetics	
										LM324	◊ Samsung	
										IR3702	Sharp	
7.0	15000	2000	10	45	160	1	70	0	Video Mux Input	HA2444	◊ Harris	10
										MC3303	◊ Samsung	
										MC3303	◊ TI	
										CA3410A	Harris	
										LM3303	National	
8	500	250	—	1	0.6 *	10	70	0	General Purpose	CA224	Harris	15
										IR3702	Sharp	
										CA224	Harris	
										LM324	◊ Samsung	
										IR3702	Sharp	
9	0.2	0.05	10 *	4 *	10	35	70	0	Low Noise Bipolar JFET	HA2444	◊ Harris	20
										MC3303	◊ Samsung	
										MC3303	◊ TI	
										CA3410A	Harris	
										LM3303	National	
10	0.0007	0.0001	2 *	2.2	5.3	10	70	0	LinCMOS, High Bias	LM324	◊ Samsung	25
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.0007 *	0.0001 *	2.1	0.635	0.62	25	65	0	LinCMOS, Precision, Medium Bias Mode	LM324	◊ Samsung	30
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.001	0.001	2	0.7	0.6	20	70	0	Low Input Offset and Bias Currents	LM324	◊ Samsung	35
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.001 *	0.001 *	2 *	1 *	0.6 *	30	65	0	LinCMOS, Medium Bias	LM324	◊ Samsung	40
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.001	0.001	5	2.3	4.5	10	70	0	Low Input Offset and Bias Currents	LM324	◊ Samsung	45
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.001 *	0.001 *	5 *	3.5 *	5.5 *	10	65	0	LinCMOS, High Bias	LM324	◊ Samsung	50
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.02	0.03	7	0.2	0.1	300	60	0	Rail-to-Rail Micropower	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.03	0.03	7	0.7 *	0.7 *	10	60	0	CMOS, Rail to Rail Single/Dual 5V supply	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.05	0.03	20 *	1 *	1.6 *	80	70	0	Low Power	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.1	0.03	10	3	10	40	90	1	JFET Input	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.05	0.05	10	1	1	25	70	0	Low Power BIFET	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
10	0.05	0.05	10	2	0.6	25	70	0	Low-Power J-FET Input	LM324	◊ Samsung	55
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	
										LM324	◊ TI	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

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LINEAR—Operational Amplifiers-Characteristics (Cont'd)

Offset Voltage mV (25°C)	Bias Current nA (25°C)	Offset Current nA (25°C)	Voltage Drift μV/°C	Bandwidth MHz	Slew Rate V/μs	Voltage Gain V/mV	CMRR dB	Comp.	Comments	Device	Source	Line
Quad Units (Cont'd)												
10	0.2	0.05	10 *	3 *	13 *	3	70		J-FET Input	NJM074	◊ NJR (3594)	
				3 *	13 *	25	70	0	Low Noise, Bipolar JFET	TL074C	◊ SGS-Thomson	
				4 *	13 *	25	70	0	Low Noise Bipolar-JFET	TL074C	◊ TI	5
										TL075C	TI	
										TC075	Toshiba	
			10 *	40 *	25			0	High Speed, JFET Input	MC34084	Motorola	
									High-Speed, JFET Input	MC35084	† Motorola	
			20 *	80 *	25			0	Decompensated MC34084 for Gain >2	MC34085	Motorola	10
									Decompensated MC35084 for Gain >2	MC35085	† Motorola	
	0.1		10 *	3	13	100	80		Quad JFET input	KF347	◊ Samsung	
				3 *	13 *	25	70	0	BiFET, General Purpose	LF347	TI	
				3 *	13 *	50	70	0	Bipolar JFET	μA774C	National	
				4 *	13 *	25	70	0	Bipolar-JFET	MC34004	Motorola	15
										MC35004	† Motorola	
									Bipolar-JFET, Quad 351	LF347	Motorola	
										LF347	National	
	4		10 *	4 *	13 *	25	70	0	High Speed, JFET Input	TDB0347	SGS-Thomson	
40	8		10 *	0.1	0.05	30	75	0	Wide Supply Range	LP2902	National	20
200	100				20		70		Single-Supply	NJM2900	◊ NJR	
										NJM3900	◊ NJR	
500	50		—	1 *	0.6 *	100	85		Single-Supply	NJM2902	◊ NJR	
				1 *	0.6 *	20	70	0	Low Power	IR93403	Sharp	
			10 *	1 *	0.6 *	—	70	0	Low Power, Single Supply	MC3403	SGS-Thomson	
	200			23		100	50			LM2902	◊ Samsung	25
650	120			110	100	5	60	2		VA4708	† VTC	
				500	150 *	10	60	0		VA4707J	VTC	
700	50	20	40 *	150 *	10	58	0			VA4707	VTC	
6000	3000			250					500 MHz GBWP	EL2424	Elantec	30
11	2	1	10 *	3	10 *	25	70	2	Wideband	MC34184	Motorola	30
11.5	4	2	10 *	3	10 *	25	70	2	Wideband	MC33184	Motorola	
12	650	120	20	40 *	30	2	60	0		VA4705J	VTC	
15	0.040	0.030		5.4	10	20	70		VICR to Negative Rail	CA3410	Harris	
	0.2	0.1	10 *	3 *	13 *	50	70	0	Bipolar-JFET	μA774LC	National	
		0.2	10 *	2 *	2	3	70	0	Low-Power J-FET	TL064C	Motorola	35
	0.4	0.2			3.5	3	70		J-FET Input	NJM064	◊ NJR (3594)	
					13	3	70		J-FET Input	NJM084	◊ NJR	
			10 *	1 *	3.5 *	3	70	0	Low Power Bipolar-JFET	064	Micro-C	
										TL064C	SGS-Thomson	40
										TL064C	◊ TI	
				3 *	13 *	25	70	0	Bipolar-FET	XR084C	Exar	
										TL084	Motorola	
										TL084	SGS-Thomson	
										TL084C	TI	45
										TL085C	TI	
									Indiv. Program.	XR096C	Exar	
									Programmable Bipolar-JFET	XR094C	Exar	
										XR095C	Exar	
				25 *	13 *	25		0	JFET Input	TL084C	Motorola	50
400	0.2		10 *	3 *	13 *	25	70	0	High Speed, JFET Input	TL084C	SGS-Thomson	
650	120		40	40 *	38	1	60	0		VA4706J	VTC	
20	0.01	0.005		10	4		55			CA5470	Harris (3508)	
	0.05	0.03	30 *	0.044 *	0.016 *	10	70	0	Low Bias	ICL7642M	◊ † Maxim	
				1	1.6	80	70	0	Low Power	ICL7641EC	Harris	55
										ICL7642EC	Harris	
										ICL7642EC	◊ Maxim	
				1.4 *	1.6 *	10	70	0	High Bias	ICL7641EC	◊ Maxim	
										ICL7641EM	◊ † Maxim	
	0.050	0.100	15 *	0.5	0.6	2	45	0	Low Power	H18573	† Holt	
30	0.05	0.1	15 *	1 *	0.8 *	1 *	70 *	0	Low Power	MC14573	Motorola	60
	1.0	0.2		0.8 *	1.0 *	1000		0	Telecom	MC143404	Motorola	
					1.5 *	200		0	Telecom	MC143403	Motorola	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Phase Locked Loops/Synthesizers

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
AM/FM Digital PLL Frequency Synthesizer	DS8908B	National		Phase Locked Loop		(Cont'd)		PLL Frequency Synthesizer (for DTS)	NJU6104	♦ NJR	
Count Extender, +4, +10/11 becomes +40/41	SP8790A	† GEC Plessey		μPD2833	† NEC			PLL Frequency Synthesizer (parallel input)	IMI145151	IMI	90
	SP8790B	GEC Plessey		NE564	Signetics		50	PLL Frequency Synthesizer, Serial Input	MB1504H/1504L	Fujitsu	
Count Extender, +8 (extends division ratio of a two modulus prescaler while retaining the difference, ie +10/11 becomes +80/81)	SP8794A	† GEC Plessey		NE568	Signetics			PLL Frequency Synthesizer with Serial Interface	MC145170	♦ Motorola	
	SP8794B	GEC Plessey		SE564	† Signetics			PLL Frequency Synthesizer (4-bit data bus input)	IMI145145	IMI	
Counter Logic Control	SP8790	GEC Plessey		SN74LS297	° TI			PLL Frequency Synthesizer, Serial Input	MB1501H/1501L	Fujitsu	95
Counter Logic Control (use with MC12012 for high frequency programming)	MC12014	Motorola		Phase Locked Loop (CMOS)			55	PLL Peripheral (VCO, mixer, amp for CB)	TA7310	Toshiba	
Crystal Controlled Frequency Synthesizer (50 to 600 MHz)	PIN604	OnChip Sys		CD4046B	† Harris			PLL, Ranges to UHF Receiver (NMOS)	LM7005	Sanyo	
Crystal Oscillator (2 to 20 MHz)	MC12061	Motorola		CD4046BE	Harris			PLL Stereo Decoder	TCA4511-2	Siemens	
Crystal Oscillator (250 kHz to 60 MHz)	CK1100A	Solarise		MC14046BC	Motorola			PLL Synthesizer (100 MHz)	HD153202	Hitachi	
	CK1114A	Solarise		CD4046BC	National			PLL Tuning Circuit, 1.3 GHz Prescaler	MC44802	Motorola	100
	CK1144A	Solarise		CD4046BM	† National			PLL with Prescaler, 1.1 GHz (+64/65, 128/129)	MB1501	Fujitsu (3484)	
	CK1145A	Solarise		74HCT7046A	Signetics			PLL with Prescaler, 520 MHz (+32/33, 64/65)	MB1504	Fujitsu	
Filter, Digital PLL	CD54HCT297	*† Harris		74HC4046A	Signetics			Prescaler + 2 (500 MHz), 4, 8, 64 (1 GHz)	μPB565	NEC	
	CD54HC297	*† Harris		74HCT7046A	Signetics			Prescaler + 8/9, 16/17, 32/33 (150 MHz)	μPB555	NEC	
	CD74HCT297	Harris		Phase Locked Loop, High Frequency	NE564	Allegro Micro		Prescaler + 8 (1 GHz)	μPB567	NEC	105
	CD74HC297	Harris		SE564	† Allegro Micro			Prescaler + 10/11, 20/22, 40/44 (150 MHz)	μPB551	NEC	
	74HC297	° Signetics		Phase Locked Loop, Programmable Divider (binary 10-bit counter)	MB87086A	Fujitsu		Prescaler + 10/11 (50 MHz), 20/22, 40/44 (150 MHz)	μPB554	NEC	
Frequency Synthesizer, Low Power	TDD1742T	Signetics		Phase Locked Loop, Programmable Divider (binary 14-bit counter)	MB87087	Fujitsu		Prescaler + 32/33, 64/65 (550 MHz)	μPB569	NEC	
Frequency Synthesizer with Prescaler (0.45 to 1.15 GHz)	UMA1010	Signetics		Phase Locked Loop Synthesizer, (AM/FM/TV sound)	DS8911	National		Prescaler + 64, 128, 256 (1.3 GHz)	μPB564	NEC	110
Frequency Synthesizer (14.318 MHz clock, replaces multiple crystals on graphics cards and subsystems)	ATT20C200	AT&T (3390)		Phase Locked Loop System (multiplier, VCO and Op Amp)	XRS200	Exar		Prescaler (divide by 32/33 or 64/65)	MC12028A	♦ Motorola	
FSK Modulator/Demodulator (See also Telecommunications)				Phase Locked Loop, with Constant Current Output Charge Pump	MB87090	Fujitsu			MC12028B	♦ Motorola	
	XR210	Exar		Phase Locked Loop, with 1.1 GHz Prescaler, Two Modulus (1) 64/65 or 128/129)	MB1501L	Fujitsu (3484)			MC12034A	♦ Motorola	
	XR210M	† Exar		Phase Locked Loop, with 2.5 GHz Prescaler (BS tunes and CATV applications)	MB1518	Fujitsu			MC12034B	♦ Motorola	
	XR2211C	Exar		Phase Locked Loop, Two Modulus (1) 64/65 or 128/129)	MB87014A	Fujitsu		Prescaler (divide by 64/65 or 128/129)	MC12032A	♦ Motorola	115
	XR2211M	† Exar		Phase-Frequency Detector	MC12040	Motorola			MC12032B	♦ Motorola	
	XR2212M	† Exar		Phase-Lock Device (internal dividers from 1/2 to 1/16 of the input clock frequency)	KS6369-15P	Cornes USA		Prescaler (divide by 64/65, 128/129)	MC12022LVA	♦ Motorola	
	XR2211C	Raytheon		Phase-Locked Loop (demodulates FM/FSK signals)	LMC568	National			MC12022LVB	♦ Motorola	
	XR2211M	† Raytheon		Phase-Locked Loop Synthesizer (1.5 GHz)	Q3036	† Qualcomm			MC12022SLA	♦ Motorola	
GHz PLL, IIC Bus	SDA3302	♦ Siemens		Phase-Locked Oscillator	ML405	MicroLinear			MC12022SLB	♦ Motorola	
Inter-carrier Frequency Modulator (internal PLL and Comparator)	4002Y-A	NCM		PIF Processor/PLL	μPC1820	NEC			MC12022TSB	♦ Motorola	120
Mixer, Double Balanced Analog Mixer	MC12002	Motorola		PLL + Prescaler	μPD2835/6	NEC			MC12022TVB	♦ Motorola	
Phase Comparator	MM54C932	† National		PLL Circuit	LC7150	Sanyo		Prescaler, for FM Radio	SP8629	GEC Plessey	
	MM74C932	National		PLL for Radio Receiver (CMOS)	LC7152	Sanyo			DS8629	National	
Phase Comparator and Programmable Counter	MC14568BC	Motorola		PLL, Controller, LCD Driver for Radio Receiver (CMOS)	LC7230	Sanyo		Prescaler, Low Power (+ 64/65) 520 MHz	MC12025	Motorola	
Phase Detector- (CMOS)	IMI4345	IMI		PLL for Radio Receiver (NMOS)	LM7001	Sanyo		Prescaler, Low Power (+ 16/17), 150 MHz	μPB556	NEC	125
Phase Locked Frequency Controller	UC1633	Unitrode		PLL Frequency Synthesizer	MB1503/13	Fujitsu		Prescaler, Low Power, (+64/65/128/136), 1 GHz	μPB562	NEC	
	UC1633/883	Unitrode			TBB200	Siemens		Prescaler, Low Power (+64), 1.1 GHz	MC12073	Motorola	
	UC1634	Unitrode		PLL Frequency Synthesizer Controller (for AM/FM radio)	NJU3200	♦ NJR		Prescaler, Low Power (+64), 225 MHz	MC12023	Motorola	
	UC1634/883	Unitrode		PLL Frequency Synthesizer (for CB Transceiver)	NJU6103	♦ NJR					
	UC2633	Unitrode									
	UC2634	Unitrode									
	UC3633	Unitrode									
	UC3634	Unitrode									
Phase Locked Loop	XR215	Exar									
	XR215M	† Exar									
	SL652	GEC Plessey									
	MX406	MX-COM									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Phase Locked Loops/Synthesizers (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Prescaler, Low Power (+256), 1.1 GHz	MC12074	Motorola		Synthesizer, Mobile Radio (2 device set)		(Cont'd)		VCO Phase Comparator, Multiplier, with Auxiliary Amplifier	SL650	† GEC Plessey	
Prescaler, Low Power VHF/UHF (divide by 64/256)	DS8673	National		SP8901	GEC Plessey			VCO Waveform Generator (includes sinewave output among its functions)			
	DS8674	National		SP8906	GEC Plessey			XR205	Exar		105
Prescaler/PLL, 1.3 GHz (+256)	MC12076	Motorola		Synthesizer, PLL			45	XR2206	† Exar		
	MC12078	Motorola		IMI145155	IMI			XR2206C	Exar		
Prescaler, UHF (+2), 740 MHz	MC12090	Motorola		IMI145156	IMI			XR2206M	† Exar		110
Prescaler, Dual Modulus	TBB102	Siemens		IMI145157	IMI			XR8038	◊ Exar		
Prescaler, Two Modulus GaAs (1 64/65, 128/129, or 256/257)	MB50202	Fujitsu		IMI145158	IMI			XR8038A	◊ Exar		
Prescaler, Two Modulus GaAs (1 64/65, 128/129, or 256/257)	MB50201	Fujitsu		MC145106	◊ Motorola			XR8038M	◊† Exar		
Prescaler, Two Modulus Selectable +64/65 or +128/129 (for positive edge-triggered synthesizers)	MC12022A	Motorola		MC145145	◊ Motorola		50	ICL8038C	Harris		
	MC12022B	Motorola		MC145146	◊ Motorola			ICL8038M	† Harris		
Prescaler, Two Modulus with VCO (1) 128/129	MB551	Fujitsu		MC145151-2	◊ Motorola			VCO, Dual	SN54S124	† TI	115
Prescaler, 0.05 to 1.3 GHz, Divide by 256	SP4742	GEC Plessey		MC145152-2	◊ Motorola			SN74LS625	TI		
Prescaler, 0.05 to 1.3 GHz, Divide by 4056 and 8192	SP4780	GEC Plessey		MC145155-2	◊ Motorola			SN74LS629	TI		
Prescaler, 0.08 to 1 GHz, Divide by 256	SP4642	GEC Plessey		MC145156-2	◊ Motorola			SN74S124	TI		
	SP4652	GEC Plessey		MC145157-2	◊ Motorola		55	VHF/UHF Prescaler (+4)	CA3199E	Harris	
	SP4653	GEC Plessey		MC145158-2	◊ Motorola			Video Dot Clock Generator	ICS1394	IntCirSys	
Prescaler, 0.08 to 1 GHz, Divide by 64	SP4632	GEC Plessey		MC145159	◊ Motorola			Video Dot Clock Generator, ECL outputs	ICS1560	IntCirSys	120
Prescaler, 1 GHz (1, 2, or 8)	MB511	Fujitsu		DS8906	National			Dual (for 46/49 MHz cordless phone)			
Prescaler, 1.1 GHz (+64/65, 128/129)	MB501LV	Fujitsu		DS8907	National			MC145160	Motorola		
	MB501SL	Fujitsu		DS8908	National			MC145166	Motorola		
	MB509	Fujitsu		HEF4750	Signetics			MC145167	Motorola		
Prescaler, 1.6 GHz (+128/129)	MB505-16	Fujitsu		SA41057	Signetics			Dual Serial Input PLL Frequency Synthesizer	MB1519	Fujitsu	125
Prescaler, 1.6 GHz (+128/129, 256/257)	MB507	Fujitsu		TC9106B	Toshiba			Dual Tone Decoder	XR2567C	Exar	
Prescaler, 2.3 GHz (+128/130/256/258/512/514)	MB508	Fujitsu		TC9109B	Toshiba			XR2567M	† Exar		
Prescaler, 2.4 GHz (+64/128/256)	MB506	Fujitsu		TC9111B	Toshiba			Two Modulus Control and Phase Comparator (for SP8793)	MJ8820	GEC Plessey	
Prescaler, 2.7 GHz (+128/144/256/272)	MB510	Fujitsu		TC9300-003A	Toshiba			Two Modulus Prescaler (+3/4)	SP8720	GEC Plessey	
Prescaler, 150 MHz, Divide by 16/17	μPB553A	NEC		TC9300-008	Toshiba			Two Modulus Prescaler (+4/8)	SP8740	GEC Plessey	
Prescaler, 200 MHz (+10/20)	MB467	Fujitsu		Synthesizer, PLL (reference oscillator, two-output phase detector, 10-bit prog. divide-by-N counter)	IMI145152	IMI		11C91C	National		130
Prescaler, 200 MHz (+16/17, 32/33)	MB503	Fujitsu		Synthesizer, PLL Serial Input System Block (13 MHz, 5V, 3 mA)	MB87001A	Fujitsu		11C91M	† National		
Prescaler, 520 MHz (+32/33, 64/65)	MB504	Fujitsu		Synthesizer (programmable divider, to 1021 channels, adder, phase comparator)	HC0320	Hughes		Two Modulus Prescaler (+5/6)	MC12009	Motorola	
	MB504L	Fujitsu		Tone Decoder	XRL567C	◊ Exar		Two Modulus Prescaler (+6/7)	SP8741	GEC Plessey	
	MB504LV	Fujitsu			XRL567M	◊† Exar		Two Modulus Prescaler (+8/9)	SP8743A	GEC Plessey	
Serial Input PLL System Block (10 MHz, 3–5V, 3.5 mA)	MB87006A	Fujitsu			XR2211C	Exar		MC12011	Motorola		135
Serial Input PLL System Block (15 MHz, 3–5V, 3 mA)	MB87073	Fujitsu			XR2211M	† Exar		Two Modulus Prescaler (+10/11)	SP8643	GEC Plessey	
	MB87076	Fujitsu			XR2213C	◊ Exar		SP8647	GEC Plessey		
Serial Input PLL System Block (95 MHz, 5V, 10 mA)	MB87086	Fujitsu			XR2213M	◊† Exar		SP8685	GEC Plessey		
Serial Input PLL System Block (180 MHz, 5V, 8 mA)	MB87014	Fujitsu			XR567AC	◊ Exar		SP8690	GEC Plessey		
Synthesizer, Mobile Radio (2 device set)	NJ8811	GEC Plessey			XR567AM	◊† Exar		MC12013	Motorola		140
	NJ8812	GEC Plessey			LM567	† National		11C90C	National		
(Continued)					LM567C	National		11C90M	† National		
					XR2211C	Raytheon		Two Modulus Prescaler (+20/21), 225 MHz	MC12019	Motorola	
					XR2211M	† Raytheon		Two Modulus Prescaler (+32/33), 225 MHz	MC12015	Motorola	
					NE567	Signetics		Two Modulus Prescaler (+40/41)	SP8793	GEC Plessey	
					SE567	† Signetics		SP8793A	GEC Plessey		
					Tone Decoder/Phase-Locked Loop	NJM567	NJR	Two Modulus Prescaler (+40/41), 225 MHz	MC12016	Motorola	
					VCO	SP1658	GEC Plessey	Two Modulus Prescaler (+64/65/32/33/16/17), 500 MHz	μPB571	NEC	
						SN74LS624	TI	Two Modulus Prescaler (+64/65, 128/129)	MB501	Fujitsu	
						SN74LS628	TI	MB501L	Fujitsu		150
					VCO and Phase Comparator	LM565	National	Two Modulus Prescaler (+64/65), 225 MHz	MC12017	Motorola	
						LM565C	† National				
						TA7133	Toshiba				
					VCO Function Generator, (Includes square and triangular waveforms - but not sine.)	XR2207	Exar				
						XR2207C	Exar				
						XR2209C	Exar				
						XR2209M	† Exar				
						LM566	National				
						LM566C	† National				
						XR2207C	Raytheon				
						XR2207M	† Raytheon				
						NE566	Signetics				
						SE566	† Signetics				
					VCO Phase Comparator, Multiplier	SL651	GEC Plessey				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Phase Locked Loops/Synthesizers (Cont'd)

Function	Device	Source	Line
Two Modulus Prescaler (+64/256)	CA3163	Harris	5
	CA3179	Harris	
Two Modulus Prescaler (+80/81)	SP8792	GEC Plessey	
	SP8792A	GEC Plessey	
Two Modulus Prescaler (+80/81/40/41/20/21), 500 MHz	μPB572	NEC	
Two Modulus Prescaler (+128/129), 520 MHz	MC12018	Motorola	
Four Modulus Prescaler (+239,240/255/256)	SP8906	GEC Plessey	
Four Modulus Prescaler (+478/480/510/512)	SP8901	GEC Plessey	

LINEAR

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ◊ Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line	
Voltage Regulators										
Fixed, Positive										
1.1	3	S81211	Seiko Instr (3622)		5	500	LM341-5 LM78M05 NJM78M05A MC78M05C L2605 L4705 L487 L78M05C TEA7034 μA78M05C μA78M05M	National National NJR Samsung SGS-Thomson SGS-Thomson SGS-Thomson SGS-Thomson SGS-Thomson TI † TI	(Cont'd) 65 70 75	
2	100 180	NJM78L02A TK11420	NJR Toko			750	CS925 CS935 LM2935T LM2925 LM2935 LM2935	Cherry Semi Cherry Semi Motorola National National SGS-Thomson	80	
2.2	35	LBRO22B	AT&T			1000	M5F7805 LM109K LM1575-5.0 LM2575-5.0 LM2940C-12 LM2940C-15 LM2940C-5.0 LM2940T-5 LM309K NJM7805A MC7805C μA7805 L7805 L7805C SFC2109M SG109 SG309 μA7805C TA78005A UC7805A UC7805AC	Mitsubishi ‡ National † National National National National National National National NJR Samsung † SGS-Thomson † SGS-Thomson SGS-Thomson SGS-Thomson † SiliconG SiliconG TI Toshiba † Unitrode Unitrode	85 90 95 100	
2.5	25 180	S81225 TK11425 TK11625	Seiko Instr (3622) Toko Toko	5		1500	GL7805 LT1086-5C LT1086-5M 42094-u05 LM340-5 MC7805AC TL780-5C μA7805C μA7805M LM140-5 LM140A-5 LM2931-5 LM2940-5 LM340-5 LM340A-5 LM7805 LAS15A05 LAS1505 L7805AC SG140-05 SG340-05 SG7805 SG7805A SG7805AC SG7805C LM340-5 TL780-05C UC7805 UC7805C	‡ TI ‡ TI Toshiba National National National National National National NJR Samsung † SGS-Thomson † SGS-Thomson SGS-Thomson † SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI TI † Unitrode Unitrode	105 110 115 120 125 130	
2.6	100	μA78L02AC μA78L02C TA7316	TI TI Toshiba	10		2000	LAS16A05 LAS1605 LAS1605B L78S05 L78S05C	SemTech SemTech SemTech † SGS-Thomson SGS-Thomson	135	
3	30 180	S81230 TK11430 TK11630	Seiko Instr (3622) Toko Toko			2200	TL780-05	TI		
3.5	180	TK11435 TK11635	Toko Toko	15		3000	LM123	† LinearTech	(Continued)	
4	180	TK11440 TK11640	Toko Toko							
4.5	180	TK11445 TK11645	Toko Toko							
4.6	35	LBRO46A	AT&T	20						
5	35 40 50 100	LBRO50A LBRO50A S81350 LM2936 S81250 M5278L05 LM2931-5 MC78L05AC MC78L05C μA78L05C LM140LA-5 LM78L05A LM78L05C LP2950A LP2950C LP2951A LP2951C NJM2930 NJM78L05A MC78L05 MC78L05AC μA78L05AC μA78L05C TA78L005 TA78L005A	AT&T AT&T Seiko Instr National Seiko Instr (3622) Mitsubishi Motorola Motorola Motorola National National National National National National National National National National NJR NJR Samsung Samsung TI TI Toshiba Toshiba		25 30 35 40 45					
	150	LM2930-5 LM330-5	TI TI							
	180	TK11450 TK11650	Toko Toko							
	200	LM109H LM2930-5 LM309H LM330-5 SFC2109 SFC2209 SFC2309	† National National National National † SGS-Thomson SGS-Thomson SGS-Thomson	50 55						
	250	LM342-5 LP2954 LP2954A	National National National							
	400 500	L4805 M5F78M05 MC78M05C μA78M05C μA78M05M	SGS-Thomson Mitsubishi Motorola National † National	60						

IC MASTER 1992

LINEAR—Power Supply Circuits (Cont'd)

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line
Voltage Regulators (Cont'd)					(Cont'd)				
Fixed, Positive									
5	3000	LM323	LinearTech	5	6	1500	MC7806AC	Motorola	70
		LM323A	† LinearTech				MC7806C	Motorola	
		LT123A	† LinearTech	5			μA7806C	National	75
		LT323A	† LinearTech				LAS15A06	SemTech	
		LM323	Motorola	5			LAS1506	SemTech	80
		LM323A	Motorola				L7806	† SGS-Thomson	
		MC78T05AC	Motorola	10			L7806AC	SGS-Thomson	80
		MC78T05C	Motorola				L7806C	SGS-Thomson	
		LM123	† National	10			SG140-06	† SiliconG	85
		LM137HV	† National				SG340-06	SiliconG	
		LM323	National	15			SG7806	† SiliconG	90
		LM323A	National				SG7806A	† SiliconG	
		KA78T05C	Samsung	15			SG7806AC	SiliconG	90
		LM323	Samsung				SG7806C	SiliconG	
		LAS14A05	SemTech	20			μA7806C	TI	85
		LAS1405	SemTech			2000	CJSE017	Solitron	
		LAS1405B	SemTech	20			CJSE019	Solitron	90
		LM123	† SGS-Thomson				CJSE021	Solitron	
		LM323	SGS-Thomson	20		3000	KA78T06C	Samsung	90
		CJSE033	Solitron			5000	CJSE800	Solitron	
		CJSE034	Solitron	20			CJSE801	Solitron	90
		CJSE035	Solitron				CJSE802	Solitron	
				25		10000	42050-610	Micropac	95
							42052-610	Micropac	
	5000	LT1003C	LinearTech	25		20000	42055-620	Micropac	100
		LT1003M	† LinearTech		6.2	100	μA78L62C	National	
		42050-055	Micropac	25			LM78L62	National	95
		42052-055	Micropac				MC78L62AC	Samsung	
		μA78H05	National	30			μA78L06AC	◊ TI	100
		μA78H05A	National				μA78L06C	◊ TI	
		LAS19A05	SemTech	30	7	100	TA78L007	Toshiba	100
		LAS1905	SemTech				TA78L007A	Toshiba	
		LAS1905B	SemTech	35		500	M5F78M07	Mitsubishi	105
		CJSE806	Solitron			1000	M5F7807	Mitsubishi	
		CJSE807	Solitron	35		10000	42050-710	Micropac	110
		CJSE808	Solitron				42052-710	Micropac	
	8000	LAS39A05	SemTech	35		20000	42055-720	Micropac	105
		LAS39A05K	SemTech		7.5	100	TA78L075	Toshiba	
		LAS3905	SemTech	40			TA78L075A	Toshiba	110
		LAS3905K	SemTech			1000	L78S75	† SGS-Thomson	
	10000	MLM196-05	Micropac	40			L7875	† SGS-Thomson	115
		MLM396-05	Micropac				L7875C	SGS-Thomson	
		42050-510	Micropac	45	8	100	MC78L08AC	Motorola	115
		42052-510	Micropac				MC78L08C	Motorola	
		μA78P05	National	45			NJM78L08A	NJR	120
	20000	42055-520	Micropac				MC78L08AC	Samsung	
5 (dual output)	50	CA3276E	Harris	45			μA78L08AC	◊ TI	125
5/5 (dual)	750	SG29055	SiliconG				μA78L08C	◊ TI	
		SG29055A	SiliconG	50			TA78L008	Toshiba	130
5.1	35	LBR051A	AT&T				TA78L008A	Toshiba	
5.2	35	LBR0502A	AT&T	50		150	LM2930-8	TI	120
6	100	NJM78L06A	NJR			200	LM2930-8	National	
		TA78L006	Toshiba	55		500	M5F78M08	Mitsubishi	125
		TA78L006A	Toshiba				MC78M08C	Motorola	
	500	M5F78M06	Mitsubishi	55			MC78M08C	National	130
		MC78M06C	Motorola				μA78M08C	National	
		μA78M06C	National	60			μA78M08M	† National	135
		μA78M06M	† National				LM78M08	National	
		LM78M06	National	60			NJM78M08A	NJR	135
		NJM78M06A	NJR				MC78M08C	Samsung	
		MC78M06C	Samsung	65			μA2808	SGS-Thomson	130
		L78M06C	SGS-Thomson				L78M08C	SGS-Thomson	
		μA78M06C	TI	65		1000	μA78M08C	TI	135
	1000	M5F7806	Mitsubishi				M5F7808	Mitsubishi	
		LM7806	National	65			LM2940T-8	National	135
		NJM7806A	NJR				LM7808	National	
		MC7806C	Samsung	65			NJM7808A	NJR	135
		μA7806	SGS-Thomson				MC7808C	Samsung	
	1500	GL7806	GoldStar	65		1500	GL7808	GoldStar	135
		LM340-6	Motorola				LM340-8	Motorola	
							MC7808AC	Motorola	135
							MC7808C	Motorola	

(Continued)

(Continued)

† Mil Temp Range (–55° to 125°C) 1

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line
Voltage Regulators (Cont'd)					(Cont'd)				
Fixed, Positive					10	20000	42055-1020	Micropac	(Cont'd)
					10.3	35	LBR103D	AT&T	
8	1500	μA7808C μA7808M L7808 L7808AC L7808C SG140-08 SG340-08 SG7808 SG7808A SG7808AC SG7808C μA7808C	National † National † SGS-Thomson † SGS-Thomson † SGS-Thomson † SiliconG † SiliconG † SiliconG † SiliconG † SiliconG † SiliconG TI	5	11	1000	MC7811C	Samsung	70
	3000	MC78T08C KA78T08C	Motorola Samsung	10	12	35 100	LBR120A M5278L12 MC78L12AC MC78L12C μA78L12C LM140LA-12 LM340LA-12 LM78L12A LM78L12C NJM78L12A MC78L12 MC78L12AC μA78L12C μA78L12C TA78L012 TA78L012A	AT&T Mitsubishi † Motorola Motorola National † National National National National National † Samsung Samsung † TI † TI Toshiba Toshiba	75 80 85
	5000	μA78H08C	National	15		250	LM342-12	National	
	10000	42052-810	Micropac	20		300	52051-012	Micropac	
	20000	42055-820	Micropac	25		500	M5F78M12 MC78M12C μA78M12C μA78M12M LM341-12 LM78M12 NJM78M12A MC78M12C L78M12C μA78M12C μA78M12M	Mitsubishi Motorola National † National National National NJR Samsung SGS-Thomson TI † TI	90 95 100
8.2	100	MB3756 μA78L82C LM78L82	Fujitsu National National	30		1000	M5F7812 LM1575-12 NJM7812A MC7812C μA2812 TA78012A UC7812 UC7812C	Mitsubishi National NJR Samsung SGS-Thomson Toshiba † Unitrode Unitrode	105
8.2/5 (dual)	750	SG29085 SG29085A	SiliconG SiliconG	35		1500	GL7812 LT1086-12C LT1086-12M 42094-012 LM340-12 LM340A-12 MC7812AC MC7812C TL780-12C μA7812C μA7812M LM140-12 LM140A-12 LM2940-12 LM340-12 LM340A-12 LM7812 LAS15A12 LAS1512 L7812 L7812AC L7812C SG140-12 SG340-12 SG7812 SG7812A SG7812AC SG7812C μA7812C LM340-12 TL780-12C UC7812A UC7812AC	GoldStar LinearTech † LinearTech Micropac Motorola Motorola Motorola Motorola Motorola National † National † National National National National National SemTech SemTech † SGS-Thomson SGS-Thomson SGS-Thomson † SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI TI † Unitrode Unitrode	110 115 120 125 130 135 140
8.5	400	L4885	SGS-Thomson	40					
	500	L2685	SGS-Thomson	45					
	1000	L4785	SGS-Thomson	50					
		μA7885C MC7885C μA7885C	National Samsung TI	55					
9	100	μA78L09C LM78L09 NJM78L09A MC78L9AC μA78L09AC μA78L09C TA78L009 TA78L009A	National National NJR Samsung † TI † TI Toshiba Toshiba	60					
	500	M5F78M09 NJM78M09A	Mitsubishi NJR	65					
	1000	M5F7809 NJM7809A MC7809C	Mitsubishi NJR Samsung						
	1500	GL7809 L78S09 L7809 SL78S09C	GoldStar † SGS-Thomson SGS-Thomson SGS-Thomson						
	10000	42052-910	Micropac						
	20000	42055-920	Micropac						
10	100	M5278L10 μA78L10AC μA78L10C TA78L010 TA78L010A	Mitsubishi † TI † TI Toshiba Toshiba						
	200	LH0075	† National						
	400	L4810	SGS-Thomson						
	500	M5F78M10 MC78M10C L2610 L4710 μA78M10C	Mitsubishi Samsung SGS-Thomson SGS-Thomson TI						
	1000	M5F7810 LM2940T-10 MC7810C	Mitsubishi National Samsung						
	1500	μA7810C	TI						
	2000	L78S10 L78S10C	† SGS-Thomson SGS-Thomson						
	9000	42050-109 42052-109	Micropac Micropac						

LINEAR

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available † Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line
Voltage Regulators (Cont'd)					(Cont'd)				
Fixed, Positive									
12	2000	LAS16A12 LAS1612 LAS1612B L78S12C L7812 L7812C	SemTech SemTech SemTech SGS-Thomson † SGS-Thomson SGS-Thomson	5	15	1000	L7815C TA78015A UC7815 UC7815A UC7815AC UC7815C	SGS-Thomson Toshiba † Unitrode † Unitrode Unitrode Unitrode	70
	2200	TL780-12 52053-012	TI Micropac	10		1500	GL7815 42094-015 LM340-15 MC7815AC MC7815C μA7815C μA7815M LM140-15 LM140A-15 LM2940-15 LM340-15 LM340A-15 LM7815 LAS15A15 LAS1515 L7815AC SG140-15 SG7815 SG7815A SG7815AC SG7815C μA7815C LM340-15 TL780-15C	GoldStar Micropac Motorola Motorola Motorola National † National † National † National National National National National National SemTech SemTech SGS-Thomson † SiliconG † SiliconG † SiliconG SiliconG SiliconG TI TI	75 80 85 90 95 100 105
	3000	MC78T12AC MC78T12C KA78T12C LAS14A12 LAS1412 LAS1412B CJSE036 CJSE037 CJSE038	Motorola Motorola Samsung SemTech SemTech SemTech Solitron Solitron Solitron	15		2000	LAS16A15 LAS1615 LAS1615B L78S15 L78S15C CJSE001 CJSE003 CJSE005	SemTech SemTech SemTech † SGS-Thomson SGS-Thomson Solitron Solitron Solitron	110 115 120 125
	5000	μA78H12A LAS19A12 LAS1912 LAS1912B CJSE092 CJSE093 CJSE094	National SemTech SemTech SemTech Solitron Solitron Solitron	20		2200	TL780-15 52053-015 MC78T15AC MC78T15C LM1576-15 KA78T15C LAS14A15 LAS1415 LAS1415B	TI Micropac Motorola Motorola National Samsung SemTech SemTech SemTech	130 135 140
	8000	42050-128 42052-128	Micropac Micropac	25		3000	LAS19A15 LAS1915 LAS1915B CJSE086 CJSE087 CJSE088	SemTech SemTech SemTech Solitron Solitron Solitron	145 150 155
	10000	MLM196-12 MLM396-12 μA78P12	Micropac Micropac National	30		5000	42050-158 42052-158 MLM196-15 MLM396-15 42055-1516	Micropac Micropac Micropac Micropac Micropac	160 165 170 175 180
	16000	42055-1216	Micropac	35		8000	42050-168 42052-168 42055-1612	Micropac Micropac Micropac	185 190 195
12/5 (dual)	750	SG29125 SG29125A	SiliconG SiliconG	40	16	8000	42050-168 42052-168 42055-1612	Micropac Micropac Micropac	200 205 210
13.2	100	TA78L132 TA78L132A	Toshiba Toshiba	45	18	100	MC78L18AC MC78L18C NJM78L18A MC78L18AC TA78L018 TA78L018A	Motorola Motorola NJR Samsung Toshiba Toshiba	215 220 225 230 235 240
14	8000	42050-148 42052-148	Micropac Micropac	50		300	52051-018	Micropac	245
	16000	42055-1416	Micropac	55		500	M5F78M18 MC78M18C MC78M18C μA78M15C μA78M15M LM341-15 LM78M15 NJM78M15A MC78M15C L78M15C μA78M15C	Mitsubishi Motorola Motorola National † National National National NJR Samsung SGS-Thomson TI	250 255 260 265 270 275 280 285 290 295 300
15	35	LBR150A	AT&T	60		1000	M5F7815 LP1575-15 MC7815C L7815	Mitsubishi National Samsung † SGS-Thomson	305 310 315 320
	100	MC78L15AC MC78L15C μA78L15C LM140LA-15 LM340LA-15 LM78L15A LM78L15C NJM78L15A MC78L15 MC78L15AC μA78L15AC μA78L15C TA78L015 TA78L015A	Motorola Motorola National † National National National National NJR Samsung Samsung TI TI Toshiba Toshiba	65					
	250	LM342-15	National						
	300	52051-015	Micropac						
	500	M5F78M15 MC78M15C μA78M15C μA78M15M LM341-15 LM78M15 NJM78M15A MC78M15C L78M15C μA78M15C	Mitsubishi Motorola National † National National National NJR Samsung SGS-Thomson TI						
	1000	M5F7815 LP1575-15 MC7815C L7815	Mitsubishi National Samsung † SGS-Thomson						
(Continued)					(Continued)				

† Mil Temp Range (-55° to 125°C) 1 ‡ High Rad Resistance *Typical Value *Behavioral Model Available † Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line
Voltage Regulators									
Fixed, Positive (Cont'd)									
18	500	L78M18C SG7818AC	SGS-Thomson SiliconG	5	24	500	μA78M24M † LM78M24 NJM78M24A MC78M24C L78M24C μA78M24C	National National NJR Samsung SGS-Thomson TI	(Cont'd) 70
	1000	M5F7818 LM7818 MC7818C μA2818 L7818 L7818C	Mitsubishi National Samsung SGS-Thomson † SGS-Thomson SGS-Thomson			1000	M5F7824 LM7824 MC7824C μA2824 L7824 L7824C	Mitsubishi National Samsung SGS-Thomson † SGS-Thomson SGS-Thomson	75
	1500	42094-018 LM340-18 MC7818AC MC7818C μA7818C μA7818M L7818AC SG140-18 SG340-18 SG7818 SG7818A SG7818C μA7818C	Micropac Motorola Motorola Motorola National † National SGS-Thomson † SiliconG SiliconG † SiliconG † SiliconG SiliconG TI	10 15 20		1500	GL7824 42094-024 LM340-24 MC7824AC MC7824C μA7824C μA7824M SG140-24 SG340-24 SG7824 SG7824A SG7824AC SG7824C μA7824C	GoldStar Micropac Motorola Motorola Motorola National † National † SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI	80 85 90
	2000	L78S18 L78S18C	† SGS-Thomson SGS-Thomson	25		2000	L78S24 L78S24C	† SGS-Thomson SGS-Thomson	95
	3000	52053-018 KA78T18C	Micropac Samsung	30		3000	52053-024 KA78T24C CJSE039 CJSE040 CJSE041	Micropac Samsung Solitron Solitron Solitron	100
	8000	42050-188 42052-188	Micropac Micropac	35		4000	42050-244 42052-244	Micropac Micropac	105
	12000	42055-1812 42055-1812	Micropac Toshiba	40		5000	CJSE074 CJSE075 CJSE076	Solitron Solitron Solitron	110
20	100	NJM78L20A TA78L020 TA78L020A	NJR Toshiba Toshiba	45		10000	42055-2410	Micropac	115
	500	M5F78M20 MC78M20C NJM78M20A MC78M20C L78M20C SG7820A SG7820AC SG7820C μA78M20C	Mitsubishi Motorola NJR † Samsung SGS-Thomson † SiliconG SiliconG SiliconG TI	50	26	4000	42050-264 42052-264	Micropac Micropac	120
	1000	M5F7820 SG140-20 SG340-20 SG7820 SG7820	Mitsubishi † SiliconG SiliconG † SiliconG SiliconG	55	28	4000	42050-284 42052-284	Micropac Micropac	125
	2000	CJSE009 CJSE011 CJSE013	Solitron Solitron Solitron	60	30	300 1500 3000 4000	52051-030 42094-030 52053-030 42050-304 42052-304	Micropac Micropac Micropac Micropac Micropac	130
	5000	CJSE080 CJSE081 CJSE082	Solitron Solitron Solitron	65	32	4000	42050-324 42052-324	Micropac Micropac	
	8000	42050-208 42052-208 42055-2010	Micropac Micropac Micropac		34	4000	42050-344 42052-344	Micropac Micropac	
22	4000	42050-224 42052-224	Micropac Micropac		75	10	TL780-15C	Motorola	
	10000	42055-2210	Micropac		Fixed, Negative				
24	100	MC78L24AC MC78L24C NJM78L24A MC78L24AC TA78L024 TA78L024A	Motorola Motorola NJR Samsung Toshiba Toshiba		2	1000	MC7902C	Samsung	
	300	52051-024	Micropac		3	30	S80230	Seiko Instr (3622)	
	500	M5F78M24 MC78M24C μA78M24C	Mitsubishi Motorola National			100	NJM79L03A	NJR	
			(Continued)		5	50	S80250	Seiko Instr (3622)	
						100	MC79L05AC MC79L05C LM79L05 LM79L05A NJM79L05A MC79L05AC	Motorola Motorola National National NJR Samsung	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◇ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR

† Mil Temp Range (-55° to 125°C) 1 ‡ High Rad Resistance *Typical Value °Behavioral Model Available ♦ Available in Surface Mount Package

LINEAR—Power Supply Circuits (Cont'd)

Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage, V	Output Current (mA)	Device	Source	Line
Fixed, Negative (Cont'd)					(Cont'd)				
12	1000	NJM7912A MC7912C	NJR Samsung		15	1500	LM7915 LAS18A15 LAS1815 μA7915 L7915C SG120-15 SG220-15 SG320-15 SG7915 SG7915A SG7915AC SG7915C μA7915C UC7915 UC7915A UC7915AC UC7915C	National SemTech SemTech SGS-Thomson SGS-Thomson † SiliconG SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI † Unitorde † Unitorde Unitorde Unitorde	75
	1500	GL7912 42095-012 MC7912AC MC7912C μA7912C μA7912M LM7912 LAS18A12 LAS1812 μA7912 L7912C SG120-12 SG220-12 SG320-12 SG7912 SG7912A SG7912AC SG7912C μA7912C UC7912 UC7912A UC7912AC UC7912C	GoldStar Micropac Motorola Motorola National † National National SemTech SemTech SGS-Thomson SGS-Thomson † SiliconG SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI † Unitorde † Unitorde Unitorde Unitorde	5		2000	42051-154 CJSE002 CJSE004 CJSE006	Micropac Solitron Solitron Solitron	80
	3000	52054-012 CJSE045 CJSE046 CJSE047	Micropac Solitron Solitron Solitron	10	3000 5000	52054-015 CJSE089 CJSE090 CJSE091	Micropac Solitron Solitron Solitron	85	
14	4000	42051-144	Micropac	15	16	4000	42051-164	Micropac	90
15	100	MC79L15AC MC79L15C LM79L15 LM79L15A MC79L15AC MC79L15C MC79L15 MC79L15A	Motorola Motorola National National Samsung Samsung TI TI	20	18	100	MC79L18C MC79L18AC	Motorola Samsung	95
	200	LM120H15 LM320H15	† National National	25		300 500	52052-018 M5F79M18 NJM79M18A MC79M18 MC79M18C	Micropac Mitsubishi NJR Samsung † Samsung	100
	300	52052-015 GL7909 M5F79M15 MC79M15 MC79M15C μA79M15AC μA79M15M LM320MP15 LM79M15 NJM79M15A MC79M15C μA79M15C	Micropac GoldStar Mitsubishi Motorola Motorola National † National National National NJR Samsung TI	30		1000	M5F7918 NJM7918A MC7918C	Mitsubishi NJR Samsung	105
	500	52052-015 GL7909 M5F79M15 MC79M15 MC79M15C μA79M15AC μA79M15M LM320MP15 LM79M15 NJM79M15A MC79M15C μA79M15C	Micropac GoldStar Mitsubishi Motorola Motorola National † National National National NJR Samsung TI	35		1500	42095-018 MC79L18AC MC79L18C L7918C SG120-18 SG320-18 SG7918 SG7918A SG7918AC SG7918C μA7918C	Micropac Motorola Motorola SGS-Thomson † SiliconG SiliconG † SiliconG † SiliconG SiliconG SiliconG TI	110
	1000	M5F7915 MC79L15A LM120K15 LM2990-15 LM320K15 LM320T15 NJM7915A MC7915C	Mitsubishi Motorola † National National National National NJR Samsung	40		3000 4000	52054-018 42051-184	Micropac Micropac	115
	1500	GL7915 42095-015 MC7915AC MC7915C μA7915C μA7915M LM120-15	GoldStar Micropac Motorola Motorola National † National † National	45	20	500	M5F79M20 μA79M20C	Mitsubishi TI	120
				50		1000 1500	M5F7920 L7920C SG120-20 SG7920 SG7920A SG7920AC SG7920C	Mitsubishi SGS-Thomson † SiliconG † SiliconG † SiliconG SiliconG SiliconG	125
				55		2000	CJSE010 CJSE012 CJSE014	Solitron Solitron Solitron	130
				60		3000 5000	42051-204 CJSE083 CJSE084 CJSE085	Micropac Solitron Solitron Solitron	135
				65	22	3000	42051-223	Micropac	140
				70	24	100	MC79L24AC MC79L24C MC79L24AC	Motorola Motorola Samsung	
						300 500	52052-024 M5F79M24	Micropac Mitsubishi	
(Continued)					(Continued)				

(Continued)

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Fixed, Negative (Cont'd)					(Cont'd)				
Output Voltage, V	Output Current (mA)	Device	Source	Line	Output Voltage Hi	Output Voltage Low	Output Current (mA)	Device	Source
24	500	NJM79M24A MC79M24C μA79M24C	NJR Samsung TI	5	20	2 5	20 1000	SFC2300 LM2941 LM2941C	SGS-Thomson National National
	1000	M5F7924 NJM7924A MC7924C	Mitsubishi NJR Samsung				3500	LT1085C LT1085M	LinearTech † LinearTech
	1500	GL7924 42095-024 MC7924C L7924C μA7924C	GoldStar Micropac Motorola SGS-Thomson TI				5000	LT1084C LT1084M	LinearTech † LinearTech
	3000	42051-243 52054-024 CJSE048 CJSE049 CJSE050	Micropac Micropac Solitron Solitron Solitron				7500	LT1083C LT1083M	LinearTech † LinearTech
	5000	CJSE077 CJSE078 CJSE079	Solitron Solitron Solitron						
26	3000	42051-263	Micropac	20	24	3	150	LM2931	National
28	3000	42051-283	Micropac		26	1.8	12	CA3085	† Harris
30	300 1500 3000	52052-030 42095-030 42051-303 52054-030	Micropac Micropac Micropac Micropac	25	27	0	200	LH0075 LH0075C	† National † National
32	3000	42051-323	Micropac		29	1.23	250	LP2952 LP2952A LP2953 LP2953A	National National National National
36	3000	42051-363	Micropac		30	1.2	1500	LT1086C LT1086M	LinearTech † LinearTech
Fixed, Dual						2	20	SFC2100 SFC2200	† SGS-Thomson SGS-Thomson
± 6	5000	42051	Micropac			3	Shunt 1800	TL430C L200	TI SGS-Thomson
± 12	100	LM126 LM326	† National National	30		4	1500 2000 3000 5000	LAS15U LAS16U LAS14AU LAS19U	SemTech SemTech SemTech SemTech
± 15	100	XR1468 XR1568 XR4195 MC1468 MC1568 LM125 LM325 RC4195 RM4195 SG1468 SG1568 SG4501	Exar † Exar ◊ Exar Motorola † Motorola † National National Raytheon † Raytheon SiliconG † SiliconG SiliconG	35		4.5	12	LM305 SG305	National National
	200	SG1501A SG2501A SG3501A	† SiliconG SiliconG SiliconG	40		5	500	μA78MGC LM78MG	National National
5,5	750,10	LM2935 LM2935	National SGS-Thomson	45			1000	μA78GC LM78G	National National
	1000,50	LT1005C LT1005M	LinearTech LinearTech	50	32	1.2	100 1000	TL317 LT1038C LT1038M	TI LinearTech † LinearTech
12,5	3000,75	LT1036C LT1036M	LinearTech † LinearTech	55			3000	LM150 LM350 LT150A LT350A LM350 LM150 LM350 LLM350 SG150 SG150A SG250 SG250A SG350 SG350A UC150 UC250 UC350	† LinearTech LinearTech † LinearTech LinearTech Motorola † National National SemTech † SiliconG SiliconG SiliconG SiliconG SiliconG SiliconG † Unitorde Unitorde Unitorde
Adjustable, Positive							5000	LM138 LM338 LT138A LT338A μA338 LM138 LM338 LLM338 SG138 SG138A SG238 SG238A SG338 SG338A	† LinearTech LinearTech † LinearTech LinearTech National † National National SemTech † SiliconG † SiliconG SiliconG SiliconG SiliconG SiliconG
16	1.3 1.5 2	40 40 40	ICL7663S ICL7663 ICL7663A MAX663C MAX663M	Harris ◊ Maxim ◊ Maxim Maxim † Maxim	60			RC1469R	Rochester
	4	8000	LAS39U	SemTech	33	2.5	500	KA350	Samsung
18	3.1	150	TK10681M TK10682M	Toko Toko		1.2	3000		
20	1.2	10000	LM196 LM396	National National					

† Mil Temp Range (–55° to 125°C) 1

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Adjustable, Positive					(Cont'd)							
Output Voltage Hi	Low	Output Current (mA)	Device	Source	Line	Output Voltage Hi	Low	Output Current (mA)	Device	Source	Line	
36	1.7	100	CA3085A	† Harris	5	40	4.5	12	LM105	‡ National	75	
	2.5	100	TL431C	Motorola						LM205		National
			TL431M	† Motorola						SG105		† SiliconG
			µA431AC	National				45		SG205		SiliconG
			LM431A	National						LM305A		National
			NJM431	NJR	10	46	1.7	100	SG305A	SiliconG	80	
			TL431C	◊ TI		48	2	100	CA3085B	† Harris		
			TL431M	◊† TI						SG1532		† SiliconG
								150		SG2532		SiliconG
	2.85	2000	TDA200	SGS-Thomson						LAS1100		SemTech
37	1.2	100	LM317L	Motorola	15	56	8	1000	LAS723B	SemTech	85	
			LM317L	National						CJCA001		Solitron
		500	SG117	† SiliconG						CJCA007		Solitron
			SG217	SiliconG		57	1.2	500	LM117HV	† LinearTech		
			SG217A	SiliconG					LM317HV	LinearTech		
			SG317	SiliconG	20			1500	LT317AHV	LinearTech	90	
			SG317A	SiliconG						LT117AHV		† LinearTech
		1000	M5N317L	Mitsubishi						LM117HV		‡ National
		1500	GL317	GoldStar						SG117AHV		† SiliconG
			LM117	† LinearTech						SG117HV		† SiliconG
			LM317	LinearTech	25	77	2	150	TDB1146	SGS-Thomson	95	
			LT117A	† LinearTech		125	1.25	700	TL783C	TI		
			LT317A	LinearTech		1000	0	100	MC1466	Motorola		
			MN5317	Mitsubishi		Adjustable, Negative						
			M5236	Mitsubishi		15	1.25	10000	MLM196N	† Micropac		100
			M5237	Mitsubishi				MLM396N	Micropac			
			LM317	Motorola	30	16	2	40	ICL7664	◊ Maxim		
			LM117	‡ National					MAX664C	Maxim		
			LM317	National					MAX664M	† Maxim		
			LM317	Samsung		24	2.2	5000	µA79HG	National		
			LLM117	SemTech		27	0	200	LH0076	◊† National	105	
			LLM317	SemTech	35				LH0076C	◊ National		
			LM117	† SGS-Thomson		30	0.035	20	LM304	National		
			LM217	SGS-Thomson					SG304	SiliconG		
			LM317	† SGS-Thomson				2.2	500	µA79MGC		National
			SG117A	† SiliconG		40				LM79MG	National	110
			LM317	TI					µA79GC	National		
			UC117	† Unitrode					LM79G	National		
			UC217	Unitrode					LAS18U	SemTech		
			UC317	Unitrode					LAS79HG	SemTech		
		3000	LLM150	SemTech	45	32	1.0	3000	LT1033C	LinearTech	115	
		5000	LLM138	SemTech					LT1033M	† LinearTech		
	1.23	1000	LM1575-ADJ	National					LM133	† National		
	2	150	MB3752	Fujitsu					LM333	National		
			CA723	† Harris		50	33	3.6	250	RC1563R		Rochester
			CA723C	Harris	37		1.2	100	LH7001	National		
			LM723	† Harris				500	LM337M	Motorola		
			LM723C	Harris				1000	M5N337L	Mitsubishi		
			MC1723	† Motorola				1500	LM137	† LinearTech		
			MC1723C	Motorola	55				LM337	LinearTech	125	
			LM723	‡ National					LT137A	† LinearTech		
			LM723C	National					LT337A	LinearTech		
			NJM723	NJR					LM337	Motorola		
			LM723	† Samsung					LM137	‡ National		
			LM723	◊† SGS-Thomson	60				LM337	National	130	
			LM723C	◊ SGS-Thomson					LM137	† SGS-Thomson		
			SFC2723C	† SGS-Thomson					LM337	SGS-Thomson		
			SFC2723EC	SGS-Thomson					SG137	† SiliconG		
			µA723	† Signetics					SG137A	† SiliconG		
			µA723C	Signetics	65				SG237	SiliconG	135	
			SA723C	Signetics					SG237A	SiliconG		
			SG723	† SiliconG					SG337	SiliconG		
			SG723C	SiliconG					SG337A	SiliconG		
			µA723	TI					LM337	TI		
			µA723C	TI	70				UC137	† Unitrode	135	
			µA723M	◊† TI					UC237	Unitrode		
	2.5	250	LM317M	Motorola					UC337	Unitrode		
			RC1569R	Rochester								
	5	25	LM376	National								
38	2	100	SG3532	SiliconG	70						135	
		150	LAS1000	SemTech								
			LAS723	SemTech								

LINEAR

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Adjustable, Negative (Cont'd)					DC-DC Converters										
Output Voltage	Output Current (mA)	Device	Source	Line	Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line				
Hi	Low														
40	0.015	20	LM104 LM204 LM104 SG104 SG204	‡ National National ‡ SGS-Thomson ‡ SiliconG SiliconG	5	250	3-7	+ 5Reg -5 Reg	BWR15/330-D12 Datal (3446) MDP505SN DIP505SN	Interpoint Interpoint	40				
47	1.2	500	LM137HV LM337HV LT137AHV LT337AHV	‡ LinearTech LinearTech ‡ LinearTech LinearTech	10	300	9-15	-5 Reg	DIP1205SN MDP1205SN	Interpoint Interpoint	45				
		1500	LM137HV LM337HV LT137AHV LT337AHV LM337HV	‡ LinearTech LinearTech ‡ LinearTech LinearTech National	15	1000	5	1 Output Reg 12 1 Output Reg. 15 1 Output Reg. 24 1 Output reg.	PWR6200 PWR6201 PWR6202 PWR6203	Burr-Brown Burr-Brown Burr-Brown Burr-Brown	50				
56	8	1000	CJCA002 CJCA008	Solitron Solitron	20	125,300	9-15	-12 Reg/ + 5 Unreg -12 Reg. + 5 Unreg	NETCON0509 NETCON1209	Interpoint Interpoint	55				
57	1.2	100 1500	LM337L LM137 LM337 LM137 LM337 UC137 UC237 UC337	National ‡ National National ‡ SGS-Thomson SGS-Thomson ‡ Unitrode Unitrode Unitrode	25				DIP121205DN MDP121205DN	Interpoint Interpoint	60				
					30				PWR5926 PWR115 PWR121	Burr-Brown Burr-Brown Burr-Brown	65				
					35				HPR103 PWR521 PWR303 PWR509 PWS722 PWR315 PWR515	Burr-Brown Burr-Brown Burr-Brown Burr-Brown Burr-Brown Burr-Brown Burr-Brown	70				
									PWS724	Burr-Brown	75				
									PWR321 PWR533	Burr-Brown Burr-Brown	80				
									PWR203 PWR215 PWR221	Burr-Brown Burr-Brown Burr-Brown	85				
									PWR603 PWR5904	Burr-Brown Burr-Brown	90				
									PWR5911 PWR609	Burr-Brown Burr-Brown	95				
									PWR615 PWR5918 PWR621	Burr-Brown Burr-Brown Burr-Brown					
									DIP370505DP PWR1104 PWR1111 PWR1118	Interpoint Burr-Brown Burr-Brown Burr-Brown					
									PWR403 MDP120505DP PWR409 PWR415 DIP240505DP PWR421	Burr-Brown Interpoint Burr-Brown Burr-Brown Interpoint Burr-Brown					
									PWR703 BPS15/500-D12 Datal	Burr-Brown Burr-Brown Burr-Brown					
									PWR709	Burr-Brown					
									PWR715 PWR721 PWR723	Burr-Brown Burr-Brown Burr-Brown					
									BWR5/700-D5 Datal (3446) BWR5/700-D48 Datal (3446)						
									BWR5/800-D12 Datal (3446)						
									BWR5/1500-D5 Datal (3446) PWR5309						
									BWR5/1700-D12 Datal (3446) BWR5/1700-D48 Datal						

(Continued)

† Mil Temp Range (-55° to 125°C) 1

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line	Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line	
DC-DC Converters (Cont'd)							(Cont'd)							
± 5	250 300 700	3-7 9-15 16-32	± 5 Reg, -5 Unreg + 5 Reg/-5 Unreg 2 Outputs	MDP5050DP DIP120505DP PS2815	Interpoint Interpoint Adv Analog		± 12	± 125	9-15	± 12 Reg/Balance Unreg 2 outputs	MDP121212DB DCH1212D	Interpoint Interpoint		
± 5,12	± 208	16-40	4 outputs	MQO28512Q	Interpoint				10.8-13 10.8-14	2 Outputs	MDR1212DT	Interpoint	60	
± 5,15	± 167	16-40	4 outputs	MQO28515Q	Interpoint				12	2 Outputs Reg. 2 Outputs Unreg.	DDR1212DT BWR12/125-D12 BPS12/125-D12	Interpoint Datel Datel	(3446)	
± 12	± 19 ± 14	15 3-7	2 Outputs Unreg. ± 12 Reg/Balance Unreg	PWR116 DIP371212DB PWR110 PWR122	Burr-Brown Interpoint Burr-Brown Burr-Brown	5			15 16-32	2 Outputs Unreg. + 12 Reg/-12 Unreg + 12 Reg, -12 Unreg -12 Reg/ + 12 Unreg -12 Reg, + 12 Unreg ± 12 Reg/Balance Unreg	PWR410 PWR416 DIP241212DP MDP241212DP DIP241212DN MDP241212DN DIP241212DB MDP241212DB	Burr-Brown Burr-Brown Interpoint Interpoint Interpoint Interpoint Interpoint Interpoint	65	
± 19	12 24	12 24	2 Oputput Unreg. 2 Outputs Unreg.	BPM12/25-D5 BPM12/25-D12 BPM12/25-D28	Datel Datel Datel	10			20-26 20-28 20-32 24 24-30 24-32 28	2 Outputs 2 Outputs 2 outputs 2 Outputs Unreg. 2 Outputs 2 Outputs 2 Outputs Reg.	MDR2412DT DDR2412DT DCH2812D PWR422 MDR2812DT DDR2812DT BPS12/125-D28	Interpoint Interpoint Interpoint Burr-Brown Interpoint Interpoint Datel	75	
± 25	5 12 28	5 12 28	2 Outputs Reg. 2 Outputs Reg. 2 Outputs Reg.	HPR104 HPR110 HPR116	Burr-Brown Burr-Brown Burr-Brown	15			44-56 48	2 Outputs 2 Outputs	DDR4812DT BWR12/125-D48	Interpoint Datel	(3446)	
± 30	15	Unreg.	Unreg.	PWR1313 PWR316 PWR516	Burr-Brown Burr-Brown Burr-Brown	20			± 150	4.5-5.5 10.8-14	2 Outputs 2 Outputs 2 Outputs	DCR0512DT DCR1212DT DCR2812DT	Interpoint Interpoint Interpoint	80
± 40	5	2 Outputs Reg.	2 Outputs Reg.	DIP2412DT PWR522 DIP2812DT DIP5012DT	Interpoint Burr-Brown Interpoint Interpoint	25			± 167	4-6.5 16-32 44-56	2 Outputs 2 outputs 20 Outputs	DDC0512D MSR2812D DCR4812DT	Interpoint Interpoint Interpoint	85
± 42	4	2 Outputs Unreg.	2 Outputs Unreg.	PWR204 PWR210 PWR222	Burr-Brown Burr-Brown Burr-Brown	30			± 208	4-6.5 9-15 20-32 36-50	2 Outputs 2 Outputs 2 Outputs 2 Outputs	DC0512D DDC1212D DDC2812D DDC4812D	Interpoint Interpoint Interpoint Interpoint	90
	5	2 Outputs	2 Outputs Unreg.	PWR5920 PWR5905 PWR5912 PWR5919	Burr-Brown Burr-Brown Burr-Brown Burr-Brown	35			± 209	5 12 15 24	2 Outputs Reg. 2 Outputs Reg. 2 Outputs Reg. 2 Outputs Reg.	PWR704 PWR710 PWR716 PWR722	Burr-Brown Burr-Brown Burr-Brown Burr-Brown	95
	10.8-14	2 Outputs 2 Outputs Unreg.	2 Outputs 2 Outputs Unreg.	PWR604 PWR610 PWR616 PWR622	Burr-Brown Burr-Brown Burr-Brown Burr-Brown	40			± 230	5 12	2 Outputs Reg. 2 Outputs Reg.	BPS12/230-D5 BPS12/230-D12	Datel Datel	100
	15	2 Outputs Unreg.	2 Outputs Unreg.	MDP51212DP MD51212DN DIP371212DN DIP371212DP MD51212DB	Interpoint Interpoint Interpoint Interpoint Interpoint	45			± 267	9-15 20-32 36-56	2 Outputs 2 Outputs 2 Outputs	DC1212D DC2812D DC4812D	Interpoint Interpoint Interpoint	105
	20-28 24 24-32 44-56	2 Outputs 2 Outputs Unreg. 2 Outputs 2 Outputs	2 Outputs 2 Outputs Unreg. 2 Outputs 2 Outputs	DDR0512DT DCH0512D PWR1105	Interpoint Interpoint Burr-Brown	50			± 335 ± 375 ± 414 ± 415	5 5 16-40 ± 12 48	2 Outputs Reg. 2 Outputs Reg. 2 outputs 2 Outputs Reg. 2 Outputs Reg.	BWR12/335-D5 PWR5104 MLP2812D BWR12/415-D12 BWR12/415-D48	Datel Burr-Brown Interpoint Datel Datel	(3446) (3446) (3446) (3446)
	10.8-14	2 Outputs 2 Outputs Unreg.	2 Outputs 2 Outputs Unreg.	DIP121212DB PWR1112 PWR1119	Interpoint Burr-Brown Burr-Brown	55			± 420	5 12	2 Outputs Reg. 2 Output Reg. 2 Outputs Reg.	BPM12/420-D5 BPM12/420-D12 BPM12-420-D12	Datel Burr-Brown Datel	
± 105	5	2 Outputs Reg.	2 Outputs Reg.	BWR12/105-D5	Datel							BPM12/420-D12	Datel	
± 125	5	2 Outputs Reg. 2 Outputs Unreg.	2 Outputs Reg. 2 Outputs Unreg.	BPS12/125-D5 PWR404	Datel Burr-Brown							BPM12/420-D12	Datel	
(Continued)							(Continued)							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line	Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line
DC-DC Converters (Cont'd)							(Cont'd)						
± 12	± 420	24	2 Outputs Reg.	BPM12/420-D24	Burr-Brown		± 15	± 38	20-28	2 Output	DIP2415DT	Interpoint	
				BPM12/420-D24	Datel			± 45	5	2 Output Unreg.	PWR103	Burr-Brown	55
		28	2 Outputs Reg.	BPM12-420-D28	Datel				12	2 Output Unreg.	PWR109	Burr-Brown	
		48	2 Outputs Reg.	BPM12/420-D48	Datel			± 50	5	2 Outputs Unreg.	PWR205	Burr-Brown	60
± 500	16-40	2 outputs		MHF2812D	Interpoint				10-20	2 Outputs Unreg.	PWR74	Burr-Brown	
± 625	4-8	2 outputs		MHL0512D	Interpoint				12	2 Outputs Unreg.	PWR211	Burr-Brown	
	5	2 Outputs Reg.		BWR12/625-D5	Datel (3446)				15	2 Outputs Reg.	PWR1726	Burr-Brown	
	12	2 Outputs Reg.		BPS12/625-D12	Datel					2 Outputs Unreg.	PWR217	Burr-Brown	
	16-40	2 outputs		MRH2812D	Interpoint				24	2 Outputs Unreg.	PWR223	Burr-Brown	
	17-40	2 outputs		MHE2812D	Interpoint			± 66	5	2 Outputs Reg.	PWR5906	Burr-Brown	65
		2 Outputs		AHE2812D	Adv Analog (3307)				12	2 Outputs Reg.	PWR5913	Burr-Brown	
	18-36	2 Outputs		HR152-2812	Interpoint			± 67	5	2 Outputs Reg.	PWR605	Burr-Brown	
	24	2 Outputs Reg.		BPS12/625-D24	Datel				12	2 Outputs Reg.	PWR611	Burr-Brown	
± 830	12			BWR12/830-D12	Datel (3446)				15	2 Outputs Reg.	PWR617	Burr-Brown	
	48			BWR12/830-D48	Datel (3446)				24	2 Outputs Reg.	PWR623	Burr-Brown	
± 1250	12	2 Outputs Reg.		BPS12/1250-D12	Datel			± 83	3-7	± 15 Reg/Balance Unreg	DIP371515DB	Interpoint	70
	18-36	Hi-Rel		HR302-2812	Interpoint				4.5-5.5		MDP51515DB	Interpoint	
	18-40	2 outputs		MTW2812D	Interpoint				2 Outputs		DDR0515DT	Interpoint	
	24	2 Outputs Reg.		BPS12/1250-D24	Datel				4-6.5	2 outputs	DCH0515D	Interpoint	
± 2500	18-40	2 Outputs		ATW2812D	Adv Analog (3307)				5	2 Outputs Unreg.	PWR1106	Burr-Brown	
± 2920	19-40	2 outputs		MFW2812D	Interpoint				12	2 Outputs Unreg.	PWR1113	Burr-Brown	
± 19	5	2 Output Unreg.		PWR104	Burr-Brown				24	2 Outputs Unreg.	PWR11120	Burr-Brown	75
625	9-18	2 Outputs Reg.		PWR5310	Burr-Brown			± 85	5		BWR15/85-D5	Datel (3446)	
	18-36	2 Outputs Reg.		PWR5313	Burr-Brown			± 100	± 10.8-14		DDR1215DT	Interpoint	
± 15	± 15	5	2 Outputs Unreg.	PWR105	Burr-Brown				5	2 Outputs Reg.	BPS15/100-D5	Datel	80
		12	2 Outputs Unreg.	PWR111	Burr-Brown					2 Outputs Unreg.	PWR405	Burr-Brown	
		15	2 Outputs Unreg.	PWR117	Burr-Brown				5-22	2 Outputs Unreg.	PWR503	Burr-Brown	
		24	2 Outputs Unreg.	PWR123	Burr-Brown				9-15	± 15 Reg/Balance Unreg	PWR72	Burr-Brown	
± 25	5	2 Outputs Reg.		BPM15/25-D5	Datel						DIP121515DB	Interpoint	
	10-18	2 Outputs Unreg.		PWR1017	Burr-Brown						MDP121515DB	Interpoint	
				PWR71	Burr-Brown					2 outputs	DCH1215D	Interpoint	
	12	2 Outputs Reg.		BPM15/25-D12	Datel				10.8-13		MDR1215DT	Interpoint	85
	15	Unreg.		HPR105	Burr-Brown				10-18	2 Outputs Unreg.	PWR70	Burr-Brown	
				HPR111	Burr-Brown				12	2 Outputs Reg.	BWR15/100-D12	Datel (3446)	
				HPR117	Burr-Brown					2 Outputs Unreg.	BPS15/100-D12	Datel	
				HPR123	Burr-Brown					2 Outputs Unreg.	PWR309	Burr-Brown	90
± 33	4.5-5.5	2 Outputs		DIP515DT	Interpoint						PWR411	Burr-Brown	
	5	2 Outputs Reg.		BPS15/33-D5	Datel				15	2 Outputs Unreg.	PWR417	Burr-Brown	
	10.8-14	2 Outputs		DIP1215DT	Interpoint				16-32	± 15 Reg/Balance Unreg	DIP241515DB	Interpoint	
	24-32	2 Outputs		DIP2815DT	Interpoint						MDP241515DB	Interpoint	
	44-56	2 Outputs		DIP5015DT	Interpoint						MDR2415DT	Interpoint	95
± 34	2	2 Outputs Unreg.		PWR511	Burr-Brown				20-26		DDR2415DT	Interpoint	
	5	2 Outputs Unreg.		PWR1304	Burr-Brown				20-28	2 Outputs	DCH2815D	Interpoint	
				PWR305	Burr-Brown				20-32	2 outputs	PWR423	Burr-Brown	
				PWR505	Burr-Brown				24	2 Outputs Unreg.	MDR2815DT	Interpoint	
	12	2 Outputs Unreg.		PWR1309	Burr-Brown				24-30	2 Outputs	DDR2815DT	Interpoint	
				PWR311	Burr-Brown				28	2 Outputs Reg.	BPS15/100-D28	Datel	100
	15	2 Outputs Unreg.		PWR1314	Burr-Brown				44-56	2 Outputs	DDR4815DT	Interpoint	
				PWR317	Burr-Brown				48		BWR15/100-D48	Datel (3446)	
				PWR517	Burr-Brown						DCR0515DT	Interpoint	
	24	2 Outputs Unreg.		PWR323	Burr-Brown						DCR2815DT	Interpoint	
				PWR523	Burr-Brown						DCR4815DT	Interpoint	
					(Continued)								
± 125	4.5-5.5	2 Outputs		DCR0515DT	Interpoint			± 133	4-6.5	2 Outputs	DDC0515D	Interpoint	105
	24-32	2 Outputs		DCR2815DT	Interpoint				10.8-14	2 Outputs	DCR1215DT	Interpoint	
									16-32	2 outputs	MSR2815D	Interpoint	
									44-56	2 Outputs	DCR4815DT	Interpoint	
± 150	5	2 Outputs Reg.		BPM15/150-D5	Datel			± 150	5	2 Outputs Reg.	BPM15/150-D5	Datel	110
	12	2 Outputs Unreg.		PWR209	Burr-Brown				12	2 Outputs Unreg.	BPM15/150-D24	Datel	
	24	2 Outputs Reg.		BPM15/150-D24	Datel				24	2 Outputs Reg.			
± 167	4-6.5	2 Outputs		DC0515D	Interpoint								
	5	2 Outputs Reg.		PWR705	Burr-Brown								

† Mil Temp Range (-55° to 125°C) 1

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◇ Available in Surface Mount Package

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Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line
DC-DC Converters (Cont'd)						
± 15	± 167				(Cont'd)	
		9-15	2 Outputs	DDC1215D	Interpoint	
		12	2 Outputs Reg.	PWR711	Burr-Brown	
		15	2 Outputs Reg.	PWR1546A	Burr-Brown	
				PWR717	Burr-Brown	
		20-32	2 Outputs	DDC2815D	Interpoint	5
		24	2 Outputs Reg.	PWR723	Burr-Brown	
		36-50	2 Outputs	DDC4815D	Interpoint	
± 190		5	2 Outputs Reg.	BPS15/190-D5	Datel	
		12	2 Outputs Reg.	BPS15/190-D12	Datel	
		24	2 Outputs Reg.	BPS15/190-D24	Datel	10
		28	2 Outputs Reg.	BPS15/190-D28	Datel	
		48	2 Outputs Reg.	BPS15/190-D48	Datel	
± 213		9-15	2 Outputs	DC1215D	Interpoint	
		36-56	2 Outputs	DC4815D	Interpoint	
± 275		5		BWR15/275-D5	Datel (3446)	15
± 300		16-32	+ 5 Reg, -5 Unreg	MDP240505DP	Interpoint	
± 330		48		BWR15/330-D48	Datel (3446)	
± 333		16-40	2 outputs	MLP2815D	Interpoint	
± 400		16-36	2 outputs	MHF28L15D	Interpoint	20
		19-40	2 outputs	MHF2815D	Interpoint	
± 412		5	2 Outputs Reg.	BPS15/412-D5	Datel	
		24	2 Outputs Reg.	BPS15/412-D24	Datel	
		28	2 Outputs Reg.	BPS15/412-D28	Datel	
± 500		4-8	2 outputs	MHL0515D	Interpoint	25
		5		BWR15/500-D5	Datel (3446)	
		16-36	2 outputs	MRH28L15D	Interpoint	
		17-40	2 outputs	MHE2815D	Interpoint	
			2 Outputs	AHE2815D	Adv Analog (3307)	
		18-36	2 Outputs	HR152-2815	Interpoint	30
		19-40	2 outputs	MRH2815D	Interpoint	
		24	2 Outputs Reg.	BPS15/500-D24	Datel	
± 670		48		BWR15/670-D12	Datel (3446)	
				BWR15/670-D48	Datel (3446)	
± 1000						
		12	2 Outputs Reg.	BPS15/1000-D12	Datel	35
		18-36	Hi-Rel	HR302-2815	Interpoint	
		18-40	2 outputs	MTW2815D	Interpoint	
		24	2 Outputs Reg.	BPS15/1000-D24	Datel	
± 2330						
213		19-40	2 outputs	MFW2815D	Interpoint	40
412		20-32	2 Outputs	DC2815D	Interpoint	
		12	2 Outputs Reg.	BPS15/412-D12	Datel	
500		9-18	2 Outputs Reg.	PWR5311	Burr-Brown	
		18-36	2 Outputs Reg.	PWR5314	Burr-Brown	
1500		18-36	2 Outputs Reg.	PWR5312	Burr-Brown	
± 18	± 178	9-15	2 Outputs	DC1218D	Interpoint	45
		20-32	2 Outputs	DC2818D	Interpoint	
		36-56	2 Outputs	DC4818D	Interpoint	
± 25	± 100	4-6.5	2 Outputs	DC0525D	Interpoint	
± 28	± 53	9-15	2 outputs	DCH1228D	Interpoint	
± 15						
	± 2000					
		18-40	2 Outputs	ATW2815D	Adv Analog (3307)	
2	125	15	1 Output Unreg.	PWR213	Burr-Brown	50
3.3	1800	5		UWR3.3/1800-D5	Datel (3446)	
	48			UWR3.3/1800-D48	Datel (3446)	
(Continued)						

♦ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line	Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line
DC-DC Converters (Cont'd)							(Cont'd)						
12	250	15	1 Output Unreg.	PWR413	Burr-Brown	5	67	5	1 Output Unreg.	PWR1302	Burr-Brown	55	
		20-32	1 output	DCH2812S	Interpoint				12	1 Output Unreg.	PWR1307		Burr-Brown
		24	1 Output Unreg.	PWR419	Burr-Brown	10			1 Output Unreg.	PWR308	Burr-Brown	60	
		48		UWR12/250-D48	Datel (3446)				15	1 Output Unreg.	PWR1312		Burr-Brown
417	5	1 Output Reg.		PWR701	Burr-Brown					1 Output Unreg.	PWR314		Burr-Brown
	12	1 Output Reg.		PWR707	Burr-Brown					1 Output Unreg.	PWR514		Burr-Brown
	15	1 Output Reg.		PWR713	Burr-Brown				28	1 Output Unreg.	PWR526		Burr-Brown
	24	1 Output Reg.		PWR719	Burr-Brown	15	48	1 Output Unreg.	PWR532	Burr-Brown	65		
	28	1 Output Reg.		PWR725	Burr-Brown		80	15	1 Output	PWS725		Burr-Brown	
470	5	1 Output Reg.		UPS12/470-D5	Datel					PWS725A		Burr-Brown	
	24	1 Output Reg.		UPS12/470-D24	Datel					PWS726		Burr-Brown	
										PWS726A		Burr-Brown	
530	36-56	1 Output		DC4812S	Interpoint		100	5	1 Output Unreg.	PWR202		Burr-Brown	70
665	5			UWR12/665-D5	Datel			12	1 Output Unreg.	PWR208		Burr-Brown	
750	48			UWR12/750-D48	Datel (3446)			15	1 Output Unreg.	PWR214		Burr-Brown	
830	12			UWR12/830-D12	Datel (3446)			24	1 Output Unreg.	PWR220		Burr-Brown	
1000	16-40	1 output		MHF2812S	Interpoint	20						75	
	40			DB2812S	Apex (3381)		134	5	1 Output Reg.	PWR602	Burr-Brown		
				DB2812SA	Apex (3379, 3381)			12	1 Output Reg.	PWR608	Burr-Brown		
			Dual	AHF2812D	Adv Analog (3307)			24	1 Output Reg.	PWR620	Burr-Brown		
			Single	AHF2812S	Adv Analog (3307)		166	5	1 Output Unreg.	PWR1103	Burr-Brown		
								12	1 Output Unreg.	PWR1110	Burr-Brown		
								24	1 Output Unreg.	PWR1117	Burr-Brown		
1250	5			UWR12/1250-D5	Datel (3446)		200	5		UWR15/200-D5	Datel (3446)		
	9-16	1 output		MHE1212S	Interpoint				1 Output Unreg.	PWR402	Burr-Brown		
	9-18	1 Output Reg.		PWR5301	Burr-Brown			15	1 Output Unreg.	PWR414	Burr-Brown		
	10-16	1 Output		HR151-1212	Interpoint			24	1 Output Unreg.	PWR420	Burr-Brown		
	12	1 Output Reg.		UPS12/1250-D12	Datel			48		UWR15/200-D48	Datel (3446)		
	16-40	1 output		MLP2812S	Interpoint	25	330	48		UWR15/330-D48	Datel	85	
				MRH2812S	Interpoint								
	18-36	1 Output Reg.		PWR5304	Burr-Brown		334	5	1 Output Reg.	PWR702	Burr-Brown		
	24	1 Output Reg.		UPS12/1250-D24	Datel			12	1 Output Reg.	PWR708	Burr-Brown		
								15	1 Output Reg.	PWR714	Burr-Brown		
1650	12			UWR12/1650-D12	Datel (3446)		530	5		UWR15/530-D5	Datel (3446)		90
	48			UWR12/1650-D48	Datel (3446)		600	48		UWR15/600-D48	Datel (3446)		
1667	17-40	1 output		MHE2812S	Interpoint		665	12		UWR15/665-D12	Datel (3446)		
	18-36	1 Output		HR151-2812	Interpoint		800	16-36	1 output	MHF2815S	Interpoint		
1670	7-40	1 Output		AHE2812S	Adv Analog (3307)	30		19-40	1 output	MHF2815S	Interpoint	95	
								40		DB2815S	Apex (3381)		
										DB2815SA	Apex (3379, 3381)		
2500	12	1 Output Reg.		UPS12/2500-D12	Datel								
	18-36	Hi-Rel		HR301-2812	Interpoint					AHF2815D	Adv Analog (3307)		
	18-40	1 output		MTW2812S	Interpoint					AHF2815S	Adv Analog (3307)		
		1 Output		ATW2812S	Adv Analog (3307)								
	24	1 Output Reg.		UPS12/2500-D24	Datel		1000	5		UWR15/100-D5	Datel		
								9-16	1 output	MHE1215S	Interpoint		
								9-18	1 Output Reg.	PWR5302	Burr-Brown		
5830	19-40	1 output		MFW2812S	Interpoint			10-16	1 Output	HR151-1215	Interpoint		
12, -5	104, 250	3-7	+ 12 Reg. -5 Unreg	MDP51205DP	Interpoint		35		12	1 Output Reg.	UPS15/1000-D12	Datel	
								16-36	1 output	MRH2815S	Interpoint		
12, -5	104, 250	3-7	+ 12 Reg/-5 Unreg	DIP371205DP	Interpoint			16-40	1 output	MLP2815S	Interpoint		
								18-36	1 Output Reg.	PWR5305	Burr-Brown		
125,300	16-32	+ 12 Reg/-5 Unreg		DIP241205DP	Interpoint			19-40	1 output	MRH2815S	Interpoint		
								24	1 Output Reg.	UPS15/1000-D24	Datel		
15	00	12	1 Output Unreg.	PWR408	Burr-Brown	45				UWR15/1300-D12	Datel (3446)	105	
	6	12	1 Output Reg.	PWR5910	Burr-Brown		1300	12		AHE2815S	Adv Analog (3307)		
	7	5	1 Output Unreg.	PWR502	Burr-Brown		1330	17-40	1 Output				
	30	5	1 Output Unreg.	PWR102	Burr-Brown					MHE2815S	Interpoint		
		12	1 Output Unreg.	PWR108	Burr-Brown					HR151-2815	Interpoint		
		15	1 Output Unreg.	PWR114	Burr-Brown		1333	17-40	1 output				
		24	1 Output Unreg.	PWR120	Burr-Brown			18-36	1 Output				
							2000	12	1 Output Reg.	UPS15/200-D12	Datel		
	60	15	1 Output	PWS740	Burr-Brown (3415)								
								18-36	Hi-Rel	HR301-2815	Interpoint		
65	5	1 Output Reg.		UPS15/65-D5	Datel	50		18-40	1 output	MTW2815S	Interpoint	110	
66	5	1 Output Reg.		PWR5903	Burr-Brown				1 Output	ATW2815S	Adv Analog		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Nominal Input Voltage (Vdc)	Rated Output Current (mA)	Rated Output Voltage (Vdc)	Type	Device	Source	Line
DC-DC Converters						(Cont'd)
15	2000	24	1 Output Reg.	UPS15/2000-D24	(Cont'd) Datel	
		4670	1 output	MFW2815S	Interpoint	
24	40	5	1 Output Reg.	UPM24/40-D5	Datel	5
		12	1 Output Reg.	UPM24/40-D12	Datel	
	125	12	1 Output Reg.	UPM24/125-D12	Datel	
	210	5	1 Output Reg.	UPM24/210-D5	Datel	
28		12	1 Output Reg.	UPM24/210-D12	Datel	
28	25	5	1 Output Reg.	UPM28/25-D5	Datel	10
		12	1 Output Reg.	UPM28/25-D12	Datel	
	100	5	1 Output Reg.	UPM28/100-D5	Datel	
		12	1 Output Reg.	UPM28/100-D12	Datel	
	107	9-15	1 output	DCH1228S	Interpoint	

LINEAR

† Mil Temp Range (-55° to 125°C) 1 ‡ High Rad Resistance *Typical Value °Behavioral Model Available ♦ Available in Surface Mount Package
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LINEAR—Power Supply Circuits

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Switching Regulators				Switching Regulator Circuits				Switching Regulator Circuits			
DC-to-DC Converter (Output: 1.25 to 40V, 1.5 A)	KA7507	Samsung									
Offline Switching Regulator	STK7458	Sanyo									
Power Supply Regulator, Switching Regulator Control	M5T494	Mitsubishi									
	M51978	Mitsubishi									
	M57494	Mitsubishi									
Power Switching Regulator (3A output)	MC34166	Motorola									
Power Switching Regulators, 3A	MC34163	Motorola									
Pulse Width Modulated Control Circuit	LM494	National									
PWM Controller, Current Mode	KA7505	Samsung									
	UC1842	Signetics									
	UC2842	Signetics									
	UC3842	Signetics									
PWM Controller, Voltage Mode	KA7500	Samsung									
	KA7506	Samsung									
Resonant Mode Controller	MC33066	Motorola									
	MC34066	Motorola									
Step-Up Voltage Regulator, Adjustable (provides power and control functions for step-up, flyback, and forward converter switching reg.)	LM1577-ADJ	National									
Step-Up Voltage Regulator, 12V (provides power and control functions for step-up, flyback, and forward converter switching reg.)	LM1577-12	National									
Step-Up Voltage Regulator, 15V (provides power and control functions for step-up, flyback, and forward converter switching reg.)	LM1577-15	National									
Switch Mode Regulator, Dual Output (5 V to ± 15 V or ± 12 V)	MAX743C	Maxim									
	MAX743M	Maxim									
Switching Regulator Circuit	LM1578A	National									
	LM2578A	National									
	LM2579	National									
	LM3578A	National									
	NJM2048	NJR									
	NJM2049	NJR									
	NJM2352	NJR									
	NJM2355	NJR									
	NJM3524	NJR									
Switching Regulator Circuit (with on-board MOSFET)	Si9101	Siliconix									
	Si9102	Siliconix (3679)									
Switching Regulator Circuit (150 mA)	RC4190	Raytheon									
	RM4190	Raytheon									
Switching Regulator Circuits	CS2842A	Cherry Semi									
	CS2843A	Cherry Semi									
	CS3524	Cherry Semi									
	CS3524A	Cherry Semi									
	CS3843A	Cherry Semi									
	CS593C	Cherry Semi									
	CS594C	Cherry Semi									
	CS595C	Cherry Semi									
	RL3525A	Ericsson									
	RL3846	Ericsson									
	XR1524	Exar									
	XR1525A	Exar									
	XR1527A	Exar									
	XR2230	Exar									
	XR2235	Exar									
(Continued)				(Continued)				(Continued)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Switching Regulators (Cont'd)											
Switching Regulator Circuits (Cont'd)											
UC2526A	Unitrode			Switching Regulator, 1 A	MC33129	Motorola		Boost Converter (1V to 3V)	ICL647	Harris	
UC2527A	Unitrode			UC2842A	Motorola			Boost Converter (1V to 3V) with Shutdown	ICL7647	Harris	
UC2840	Unitrode			UC2843A	Motorola			Boost Converter (1V to 5V)	ICL645	Harris	
UC3524	Unitrode			UC3842A	Motorola			Boost Converter (1V to 5V with Shutdown)	ICL644	Harris	
UC3524A	Unitrode			UC3843A	Motorola			ICL7644	Harris		115
UC3525A	Unitrode			Switching Regulator, 1.25 A	LT1072C	LinearTech		ICL7645	Harris		
UC3526A	Unitrode			LT1072M	† LinearTech			Boost Converter (1V to 5V 1A)	ICL646	Harris	
UC3527A	Unitrode			Switching Regulator, 1.25A	LT1072HVC	LinearTech		Boost Converter (1V to 5V 1A) with Shutdown	ICL7646	Harris	
UC3840	Unitrode			LT1072HVM	† LinearTech			Chopper + Chopper Parallel 2-Output Voltage Regulator	STK7563F	Sanyo	
UC493A	† Unitrode			Switching Regulator (2 A, 40 V)	LAS6420	SemTech		STK7563G	Sanyo		120
UC493AC	Unitrode			LAS6421	SemTech			Chopper Regulator (voltage regulator, dual, 5V/12V at 2—5A)	STK7561	Sanyo	
UC494A	† Unitrode			Switching Regulator, 2.5 A	LT1071C	LinearTech		STK7562	Sanyo		
UC494AC	Unitrode			LT1071M	† LinearTech			Chopper Regulator (voltage regulator, dual, 5V/24V at 2—5A)	STK7563	Sanyo	
UC495	Unitrode			Switching Regulator, 2.5A	LT1071HVC	LinearTech		Chopper Regulator (voltage regulator, dual, 5V/36V at 2—3A)	STK7565	Sanyo	
UC495A	† Unitrode			LT1071HVM	† LinearTech			Control Circuit (for switch-mode power supply)	GL8905	GoldStar	
UC495AC	Unitrode			Switching Regulator (3 A, 40 V)	LAS6430	SemTech		Current Mode Pulse Width Modulator Controller	KA3842	Samsung	
UC495B	† Unitrode			LAS6431	SemTech			Current Mode PWM Controller	GL3842	GoldStar	
UC495BC	Unitrode			Switching Regulator (3 A, 40 V, adj. current limit)	LAS6431	SemTech		LAS4030	SemTech		
Switching Regulator, Hybrid (5 A positive and negative power stages)				Switching Regulator, 5 A	LT1070C	LinearTech		LAS4031	SemTech		
PIC600	Solitron			LT1070M	† LinearTech			Current Mode PWM Controller (current mode or voltage mode control)	SG1528	† SiliconG	
PIC601	Solitron			Switching Regulator (5 A, 40 V)	LAS6450	SemTech		SG1530	† SiliconG		130
PIC602	Solitron			Switching Regulator (5 A, 40 V, adj. current limit)	LAS6451	SemTech		SG2528	SiliconG		
PIC610	Solitron			Switching Regulator, 5A	LT1070M	TI		SG2530	SiliconG		
PIC611	Solitron			Switching Regulator (8 A, 40 V)	LAS6480	SemTech		SG3528	† SiliconG		
PIC612	Solitron			Switching Regulator (8 A, 40 V, adj. current limit)	LAS6481	SemTech		SG3530	† SiliconG		135
PIC625	Solitron			Switching Regulator, 1.25A	LT1172C	LinearTech		Current Mode PWM Controller (with 2.5V bandgap reference)	AS3842	Astec Semi	
PIC626	Solitron			LT1172HVC	LinearTech			AS3843	Astec Semi		
PIC627	Solitron			LT1172HVM	† LinearTech			AS3844	Astec Semi		
PIC635	Solitron			LT1172M	† LinearTech			AS3845	Astec Semi		
PIC636	Solitron			Switching Regulator, 2.5A	LT1171C	LinearTech		Current-Mode PWM Controller (for switching power supplies)	SG1844	† SiliconG	
PIC637	Solitron			LT1171M	† LinearTech			SG1845	† SiliconG		140
PIC645	Solitron			Switching Regulator, 5A	LT1070HVC	LinearTech		SG2844	SiliconG		
PIC646	Solitron			LT1070HVM	† LinearTech			SG2845	SiliconG		
PIC647	Solitron			LT1170C	LinearTech			SG3844	SiliconG		
PIC655	Solitron			LT1170M	† LinearTech			SG3845	† SiliconG		145
PIC656	Solitron			Switchmode Controllers	HV9110	◊ Supertex		DC/DC Converter (± 15 Vdc, ± 25mA output)	PWR74	Burr-Brown	
PIC657	Solitron			HV9111	◊ Supertex			DC/DC Converter, 12V (triple output)	AT02812T	Adv Analog (3307)	
Switching Regulator (off-line, 100W)				HV9120	◊ Supertex			DC/DC Converter, 15V (triple output)	AT02815T	Adv Analog (3307)	
STK7310	Sanyo			Switchmode Controllers with MOSFET	HV9100	◊ Supertex		DC to DC Converter	PWR53XX	Burr-Brown	
Switching Regulator (off-line, 40W)				HV9101	◊ Supertex			DC to DC Converter (± 12V, ± 15V outputs from + 5V)	PWR5105	Burr-Brown	
STK7404	Sanyo			Miscellaneous				DC-to-DC Converter, (k2424V to 5V, 3000mA)	UPS5/3000-D24	Datel	
Switching Regulator (off-line, 80W)				+ 5V Stepdown Current-Mode PWN Regulator	MAX730	◊† Maxim		DC-to-DC Converter, Dual (12V to ± 12V, ± 1250mA)	BPS12/1250-D12	Datel	
STK7308	Sanyo			MAX738	◊† Maxim			DC-to-DC Converter, Dual (12V to ± 12V, ± 625mA)	BPS12/625-D12	Datel	
STK7309	Sanyo			BANG-BANG Controller (turns control element fully on or off to regulate average value of current)	LTC1041C	LinearTech		DC-to-DC Converter, Dual (12V to ± 15V, ± 1000mA)	BPS15/1000-D12	Datel	
STK7408	Sanyo			LTC1041M	† LinearTech						
Switching Regulator Power Output Stage				Battery Backup Circuit (monitors and switches to alternate power when abnormal conditions arise)	MB3780A	Fujitsu					
SM600HR	SiliconG			Battery Charger IC	L6310/U	SGS-Thomson					
SM601HR	SiliconG										
SM602HR	SiliconG										
SM610HR	SiliconG										
SM611HR	SiliconG										
SM612HR	SiliconG										
SM625HR	SiliconG										
SM627HR	SiliconG										
SM635HR	SiliconG										
SM636HR	SiliconG										
SM637HR	SiliconG										
SM645HR	SiliconG										
SM646HR	SiliconG										
SM647HR	SiliconG										
SM655HR	SiliconG										
SM656HR	SiliconG										
SM657HR	SiliconG										
SM660HR	SiliconG										
SM661HR	SiliconG										
SM662HR	SiliconG										
SM670HR	SiliconG										
SM671HR	SiliconG										
SM672HR	SiliconG										
Switching Regulator Subsystem, Universal											
LM78S40	National										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				DC-to-DC Converter (24V to 15V @ 66 mA)	PWR5917	Burr-Brown		DC-to-DC Converter (28V to $\pm 12V$ @ ± 63 mA)	PWR228	Burr-Brown	65
DC-to-DC Converter, Dual (24V to $\pm 12V$, ± 1250 mA)	BPS12/1250-D24	Datel		DC-to-DC Converter (24V to 15V @ 67 mA)	PWR320	Burr-Brown		DC-to-DC Converter (28V to $\pm 12V$ @ ± 84 mA)	PWR628	Burr-Brown	
DC-to-DC Converter, Dual (24V to $\pm 12V$, ± 625 mA)	BPS12/625-D24	Datel		PWR520	Burr-Brown		30	DC-to-DC Converter (28V to $\pm 15V$ @ ± 100 mA)	PWR429	Burr-Brown	
DC-to-DC Converter, Dual (24V to $\pm 15V$, ± 1000 mA)	BPS15/1000-D24	Datel		DC-to-DC Converter, (24V to 15V, 1000mA)	UPS15/1000-D24	Datel		DC-to-DC Converter (28V to $\pm 15V$ @ ± 15 mA)	PWR129	Burr-Brown	
DC-to-DC Converter, Triple (12V to 5/12/-5V, 1500/310/500mA)	TPS12/310-5/1500-D12	Datel		DC-to-DC Converter, (24V to 15V, 2000mA)	UPS15/2000-D24	Datel		DC-to-DC Converter (28V to $\pm 15V$ @ ± 167 mA)	PWR729	Burr-Brown	
DC-to-DC Converter, Triple (24V to 5/12/-5V, 1500/310/500mA)	TPS12/310-5/1500-D24	Datel		DC-to-DC Converter (24V to 15V, 3W unreg.)	PWR1220	Burr-Brown		DC-to-DC Converter (28V to $\pm 15V$ @ ± 34 mA)	PWR329	Burr-Brown	70
DC-to-DC Converter, Triple (12V to 5/ $\pm 12V$, 1500/ ± 310 mA)	TPS5/1500-12/310-D12	Datel		DC-to-DC Converter (24V to 5V @ 1000 mA)	PWR718	Burr-Brown		PWR529	Burr-Brown		
DC-to-DC Converter, Triple (12V to 5/ $\pm 15V$, 1500/ ± 250 mA)	TPS5/1500-15/250-D12	Datel		DC-to-DC Converter (24V to 5V @ 200 mA)	PWR318	Burr-Brown		DC-to-DC Converter (28V to $\pm 15V$ @ ± 50 mA)	PWR229	Burr-Brown	
DC-to-DC Converter, Triple (24V to 5/ $\pm 12V$, 1500/ ± 310 mA)	TPS5/1500-12/310-D24	Datel		PWR518	Burr-Brown		35	DC-to-DC Converter (28V to $\pm 15V$ @ ± 67 mA)	PWR629	Burr-Brown	
DC-to-DC Converter, Triple (24V to 5/ $\pm 15V$, 1500/ ± 250 mA)	TPS5/1500-15/250-D12	Datel		PWR5914	Burr-Brown			DC-to-DC Converter (28V to $\pm 5V$ @ ± 100 mA)	PWR327	Burr-Brown	75
DC-to-DC Converter, (5V to 12V, 80mA)	UPS-12/80-D5	Datel		DC-to-DC Converter (24V to 5V @ 250 mA)	PWR806	Burr-Brown		PWR527	Burr-Brown		
DC-to-DC Converter (5V to 15V @ 30 mA)	PWS728	Burr-Brown		PWR807	Burr-Brown			DC-to-DC Converter (28V to $\pm 5V$ @ ± 150 mA)	PWR227	Burr-Brown	
DC-to-DC Converter (5V to 5V @ 300 mA)	PWR200	Burr-Brown		DC-to-DC Converter (24V to 5V @ 300 mA)	PWR218	Burr-Brown		DC-to-DC Converter (28V to $\pm 5V$ @ ± 200 mA)	PWR627	Burr-Brown	
DC-to-DC Converter (5V to 5V, 5W reg.)	PWR7000	Burr-Brown		DC-to-DC Converter (24V to 5V @ 400 mA)	PWR618	Burr-Brown		DC-to-DC Converter (28V to $\pm 5V$ @ ± 300 mA)	PWR427	Burr-Brown	
DC-to-DC Converter (12 V to 24 V @ 125 mA)	UPM24/125-D12	Datel		DC-to-DC Converter (24V to 5V @ 500 mA)	PWR1114	Burr-Brown		DC-to-DC Converter (28V to $\pm 5V$ @ ± 45 mA)	PWR127	Burr-Brown	
DC-to-DC Converter, (12V to 12V, 1250mA)	UPS12/1250-D12	Datel		DC-to-DC Converter (24V to 5V @ 600 mA)	PWR418	Burr-Brown		DC-to-DC Converter (28V to $\pm 5V$ @ ± 500 mA)	PWR727	Burr-Brown	80
DC-to-DC Converter, (12V to 12V, 2500mA)	UPS12/2500-D12	Datel		DC-to-DC Converter (24V to 5V @ 90 mA)	PWR118	Burr-Brown		DC-to-DC Converter (28V to 12V @ 125 mA)	PWR225	Burr-Brown	
DC-to-DC Converter (12V to 15V @ 67 mA)	PWR508	Burr-Brown		DC-to-DC Converter (24V to 5V, 3W reg.)	PWR7318	Burr-Brown		DC-to-DC Converter (28V to 12V @ 167 mA)	PWR625	Burr-Brown	
DC-to-DC Converter, (12V to 15V, 1000mA)	UPS15/1000-D12	Datel		DC-to-DC Converter (24V to 5V, 3W unreg.)	PWR1218	Burr-Brown		DC-to-DC Converter (28V to 12V @ 250 mA)	PWR425	Burr-Brown	
DC-to-DC Converter, (12V to 15V, 2000mA)	UPS15/2000-D12	Datel		DC-to-DC Converter (24V to 5V, 4W unreg.)	PWR4018	Burr-Brown		DC-to-DC Converter (28V to 12V @ 38 mA)	PWR125	Burr-Brown	
DC-to-DC Converter, (12V to 15V, 3000mA)	UPS5/3000-D12	Datel		DC-to-DC Converter (24V to 5V, 5-6W unreg.)	PWR1618	Burr-Brown		DC-to-DC Converter (28V to 12V @ 84 mA)	PWR325	Burr-Brown	85
DC-to-DC Converter, (12V to 5V, 5000mA)	UPS5/5000-D12	Datel		DC-to-DC Converter (24V to 5V, 5000mA)	UPS5/5000-D24	Datel		PWR525	Burr-Brown		
DC-to-DC Converter (15V to $\pm 15V$, 3W reg.)	PWR7317	Burr-Brown		DC-to-DC Converter (24V to 9V @ 111 mA)	PWR5915	Burr-Brown		DC-to-DC Converter (28V to 15V @ 100 mA)	PWR226	Burr-Brown	
DC-to-DC Converter (15V to 15V @ 30 mA)	PWS727	Burr-Brown		DC-to-DC Converter (24V to 9V @ 277 mA)	PWR1115	Burr-Brown		DC-to-DC Converter (28V to 15V @ 134 mA)	PWR626	Burr-Brown	
DC-to-DC Converter (15V to 5V @ 200 mA)	PWR512	Burr-Brown		DC-to-DC Converter (24V to 9V, 3W unreg.)	PWR1243	Burr-Brown		DC-to-DC Converter (28V to 15V @ 200 mA)	PWR426	Burr-Brown	
DC-to-DC Converter, (24V to 12V, 1250mA)	UPS12/1250-D24	Datel		DC-to-DC Converter (28 V to 12 V @ 250 mA)	UPS12/250-D28	Datel		DC-to-DC Converter (28V to 15V @ 30 mA)	PWR126	Burr-Brown	90
DC-to-DC Converter (24V to 12V, 2500mA)	UPS12/2500-D24	Datel		DC-to-DC Converter (28 V to 5 V @ 1000 mA)	UPS5/1000-D28	Datel		DC-to-DC Converter (28V to 15V @ 334 mA)	PWR726	Burr-Brown	
DC-to-DC Converter (24V to 15V @ 334 mA)	PWR720	Burr-Brown		DC-to-DC Converter (28 V to 5 V @ 200 mA)	UPM5/200-D28	Datel		DC-to-DC Converter (28V to 15V @ 67 mA)	PWR326	Burr-Brown	
				DC-to-DC Converter (28 V to 5 V @ 2000 mA)	UPS5/2000-D28	Datel		DC-to-DC Converter (28V to 5V @ 1000 mA)	PWR724	Burr-Brown	
				DC-to-DC Converter (28 V to 5 V @ 600 mA)	UPS5/600-D28	Datel		DC-to-DC Converter (28V to 5V @ 200 mA)	PWR324	Burr-Brown	95
				DC-to-DC Converter (28V input to $\pm 15V$ output at ± 150 mA)	945	AD	(3361)	PWR524	Burr-Brown		
				DC-to-DC Converter (28V to -5.2V @ 1000 mA)	PWR6204	Burr-Brown		DC-to-DC Converter (28V to 5V @ 250 mA)	PWR808	Burr-Brown	
				DC-to-DC Converter (28V to $\pm 12V$ @ ± 125 mA)	PWR428	Burr-Brown		PWR809	Burr-Brown		
				DC-to-DC Converter (28V to $\pm 12V$ @ ± 19 mA)	PWR128	Burr-Brown		DC-to-DC Converter (28V to 5V @ 300 mA)	PWR224	Burr-Brown	
				DC-to-DC Converter (28V to $\pm 12V$ @ ± 209)	PWR728	Burr-Brown		DC-to-DC Converter (28V to 5V @ 400 mA)	PWR624	Burr-Brown	
				DC-to-DC Converter (28V to $\pm 12V$ @ ± 42 mA)	PWR328	Burr-Brown		DC-to-DC Converter (28V to 5V @ 600 mA)	PWR424	Burr-Brown	100
				PWR528	Burr-Brown			DC-to-DC Converter (28V to 5V @ 90 mA)	PWR124	Burr-Brown	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)											
DC-to-DC Converter (35 V to 27 V)	LSH6335	SemTech		DC-to-DC Converter (48V to $\pm 15V$ @ ± 83 mA)	PWR1127	Burr-Brown		DC-to-DC Converter (48V to 5V @ 600 mA)	PWR430	Burr-Brown	
LSH6355	SemTech			DC-to-DC Converter (48V to $\pm 5V$ @ ± 100 mA)	PWR333	Burr-Brown		DC-to-DC Converter (48V to 5V @ 90 mA)	PWR130	Burr-Brown	
LSH6389	SemTech			PWR533	Burr-Brown			DC-to-DC Converter (48V to 9V @ 111 mA)	PWR5922	Burr-Brown	75
DC-to-DC Converter (36–72 to 12V @ 1250 mA)	PWR5307	Burr-Brown		DC-to-DC Converter (48V to $\pm 5V$ @ ± 150 mA)	PWR233	Burr-Brown		DC-to-DC Converter (48V to 9V @ 277 mA)	PWR1122	Burr-Brown	
DC-to-DC Converter (36–72 to 15V @ 1000 mA)	PWR5308	Burr-Brown	5	DC-to-DC Converter (48V to $\pm 5V$ @ ± 200)	PWR5925	Burr-Brown	40	DC-to-DC Converter (10 to 24 Vdc output)	TK11821	Toko	
DC-to-DC Converter (36–72V to $\pm 12V$ @ 625 mA)	PWR5316	Burr-Brown		DC-to-DC Converter (48V to $\pm 5V$ @ ± 200 mA)	PWR633	Burr-Brown		DC-to-DC Converter (5V to –5V)	ICL7660S	◊ Harris	
DC-to-DC Converter (36–72V to $\pm 15V$ @ 500 mA)	PWR5317	Burr-Brown		DC-to-DC Converter (48V to $\pm 5V$ @ ± 250 mA)	PWR1125	Burr-Brown		DC-to-DC Converter (9.3 to 32 Vdc output)	TK11806	Toko	
DC-to-DC Converter (36–72V to $\pm 5V$ @ 1500 mA)	PWR5315	Burr-Brown		DC-to-DC Converter (48V to $\pm 5V$ @ ± 300 mA)	PWR433	Burr-Brown		DCto-DC Converter (15V to $\pm 12V$ @ ± 63 mA)	PWR216	Burr-Brown	80
DC-to-DC Converter (36–72V to 5/ ± 12 @ 1500/ ± 310 mA)	PWR5324	Burr-Brown		DC-to-DC Converter (48V to $\pm 5V$ @ ± 45 mA)	PWR133	Burr-Brown		Discontinuous Switching Power Supply IC	L4963	SGS-Thomson	
DC-to-DC Converter (36–72V to 5/ $\pm 15V$ @ 1500/ ± 250 mA)	PWR5325	Burr-Brown	10	DC-to-DC Converter (48V to $\pm 5V$ @ ± 500 mA)	PWR733	Burr-Brown	45	EMI Filter and Transient Suppression Module, Universal	FM704A	Interpoint	
DC-to-DC Converter (36–72V to 5/12/–5V @ 1500/310/–500 mA)	PWR5326	Burr-Brown		DC-to-DC Converter (48V to 12V @ 125 mA)	PWR231	Burr-Brown		EMI Filter Module (for dc-to-dc converters, 0.42A input)	MSF461	Interpoint	
DC-to-DC Converter (36–72V to 5V @ 3000 mA)	PWR5306	Burr-Brown		DC-to-DC Converter (48V to 12V @ 167 mA)	PWR631	Burr-Brown		EMI Filter Module (for dc-to-dc converters, 1.75A input)	FMC461	Interpoint	85
DC-to-DC Converter (40 V to 31 V)	LSH6425	SemTech		DC-to-DC Converter (48V to 12V @ 208 mA)	PWR1123	Burr-Brown		EMI Filter Module (for dc-to-dc converters, 3.8A input)	FMA461	Interpoint	
LSH6435	SemTech			DC-to-DC Converter (48V to 12V @ 250 mA)	PWR431	Burr-Brown		EMI Filter Module (for dc-to-dc converters, 5A input)	FMB461	Interpoint	50
LSH6455	SemTech			DC-to-DC Converter (48V to 12V @ 38 mA)	PWR131	Burr-Brown	15	EMI Filter, (1.75A input current)	AF461	Adv Analog	
LSH6489	SemTech			DC-to-DC Converter (48V to 12V @ 417 mA)	PWR731	Burr-Brown		EMI Filter, (3.8 A input current)	AFA461	Adv Analog	
DC-to-DC Converter (40 V to 5 V @ 2000 mA)	UPS5/2000-D48	Datel		DC-to-DC Converter (48V to 12V @ 83 mA)	PWR5923	Burr-Brown		High Speed (300kHz/6A) MOSFET Driver	HV400	Harris	90
DC-to-DC Converter (48V to –5.2V @ 1000 mA)	PWR6205	Burr-Brown		DC-to-DC Converter (48V to 12V @ 84 mA)	PWR331	Burr-Brown		High-Side Power Supplies (pos. to pos.)	MAX622	◊† Maxim	
DC-to-DC Converter (48V to $\pm 12V$ @ ± 104 mA)	PWR1126	Burr-Brown		PWR531	Burr-Brown			High-side Power Supplies (pos. to pos.)	MAX623	Maxim	
DC-to-DC Converter (48V to $\pm 12V$ @ ± 125 mA)	PWR434	Burr-Brown		DC-to-DC Converter (48V to 15V @ 100 mA)	PWR232	Burr-Brown	20	MAX622	◊† Maxim		
DC-to-DC Converter (48V to $\pm 12V$ @ ± 19 mA)	PWR134	Burr-Brown		DC-to-DC Converter (48V to 15V @ 134 mA)	PWR632	Burr-Brown		MAX623	◊ NEC		
DC-to-DC Converter (48V to $\pm 12V$ @ ± 209 mA)	PWR734	Burr-Brown		DC-to-DC Converter (48V to 15V @ 166 mA)	PWR1124	Burr-Brown		Low-Voltage step-up DC-Dc converters 1.15 to 1.15 (pos. to pos.)	MAX654	◊† Maxim	95
DC-to-DC Converter (48V to $\pm 12V$ @ ± 42 mA)	PWR334	Burr-Brown		DC-to-DC Converter (48V to 15V @ 200 mA)	PWR432	Burr-Brown		MAX655	◊† Maxim		
DC-to-DC Converter (48V to $\pm 12V$ @ ± 63 mA)	PWR234	Burr-Brown		DC-to-DC Converter (48V to 15V @ 30 mA)	PWR132	Burr-Brown		Low-Voltage step-up DC-Dc converters 1.15 to 3 (pos. to pos.)	MAX657	◊† Maxim	
DC-to-DC Converter (48V to $\pm 12V$ @ ± 83 mA)	PWR5926	Burr-Brown		DC-to-DC Converter (48V to 15V @ 334 mA)	PWR732	Burr-Brown	25	Low-Voltage step-up DC-Dc converters 1.15 to 5 (pos. to pos.)	MAX656	◊† Maxim	
DC-to-DC Converter (48V to $\pm 12V$ @ ± 84 mA)	PWR634	Burr-Brown		DC-to-DC Converter (48V to 15V @ 66 mA)	PWR5924	Burr-Brown		Low-Voltage step-up DC-Dc converters 2.5 to 3 (pos. to pos.)	MAX659	◊† Maxim	
DC-to-DC Converter (48V to $\pm 12V$ to @ ± 42 mA)	PWR534	Burr-Brown		DC-to-DC Converter (48V to 15V @ 67 mA)	PWR332	Burr-Brown		Low-Voltage step-up DC-Dc converters 2.5 to 5 (pos. to pos.)	MAX658	◊† Maxim	
DC-to-DC Converter (48V to $\pm 15V$ @ ± 100 mA)	PWR435	Burr-Brown		PWR532	Burr-Brown			Magnetic Amplifier Controller (provides control for mag. amp. regulators)	SG1559	† SiliconG	100
DC-to-DC Converter (48V to $\pm 15V$ @ ± 15 mA)	PWR135	Burr-Brown		DC-to-DC Converter (48V to 5V @ 1000 mA)	PWR730	Burr-Brown		SG1560	† SiliconG		
DC-to-DC Converter (48V to $\pm 15V$ @ ± 167 mA)	PWR735	Burr-Brown	30	DC-to-DC Converter (48V to 5V @ 200 mA)	PWR330	Burr-Brown	65	SG2559	SiliconG		
DC-to-DC Converter (48V to $\pm 15V$ @ ± 34 mA)	PWR335	Burr-Brown		PWR530	Burr-Brown		SG2560	SiliconG			
PWR535	Burr-Brown			PWR5921	Burr-Brown		SG3559	SiliconG			
DC-to-DC Converter (48V to $\pm 15V$ @ ± 50 mA)	PWR235	Burr-Brown		DC-to-DC Converter (48V to 5V @ 250 mA)	PWR810	Burr-Brown	70	SG3560	SiliconG	105	
DC-to-DC Converter (48V to $\pm 15V$ @ ± 66 mA)	PWR5927	Burr-Brown		PWR811	Burr-Brown			Micropower Regulator with Comparator and Shutdown	LT1120C	LinearTech	
DC-to-DC Converter (48V to $\pm 15V$ @ ± 67 mA)	PWR635	Burr-Brown	35	DC-to-DC Converter (48V to 5V @ 300 mA)	PWR230	Burr-Brown		Micropower Voltage Reference (10 μ A turn-on current, emulates a 1.235V zener diode)	AS1004	Astec Semi	
				DC-to-DC Converter (48V to 5V @ 400 mA)	PWR630	Burr-Brown		Over/Under Current Limit Diagnostic Circuit	LM1946	National	
				DC-to-DC Converter (48V to 5V @ 500 mA)	PWR1121	Burr-Brown		Over/Under Voltage Detector (1.6 to 16V range)	ICL7665S	◊ Harris	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Overvoltage Protector (up to 35 V, 30 A) (Cont'd)				Power Supply Control (voltage reference, over and under voltage sensing) (Cont'd)			
Over-Voltage Sensing Circuit				42093-1830	Micropac			SG3543	◊ SiliconG		130
SG3423	SiliconG			42093-2030	Micropac			SG3544	◊ SiliconG		
SG3423A	SiliconG			Overvoltage Protector (up to 35 V, 35 A)				UC1543	† Unitorde		
SG3523	SiliconG			42093-0535	Micropac		70	UC1543/883B	† Unitorde		
SG3523A	SiliconG			42093-0635	Micropac			UC1544	† Unitorde		
Overvoltage Protector				42093-0735	Micropac			UC1544/883B	† Unitorde		
MC3423	Motorola		5	42093-0835	Micropac			UC1901	† Unitorde		135
MC3523	† Motorola			42093-0935	Micropac			UC1901/883B	† Unitorde		
L20V12	SemTech			42093-1035	Micropac		75	UC1903	† Unitorde		
L20V15	SemTech			42093-1235	Micropac			UC2543	Unitorde		
L20V24	SemTech			42093-1435	Micropac			UC2544	Unitorde		
L20V5	SemTech		10	42093-1635	Micropac			UC2901	Unitorde		140
L60V12	SemTech			42093-1835	Micropac			UC2903	Unitorde		
L60V15	SemTech			42093-2035	Micropac		80	UC3543	Unitorde		
L60V24	SemTech			Overvoltage Protector (up to 35 V, 6 A)				UC3544	Unitorde		
L60V5	SemTech			42092-056	Micropac			UC3901	Unitorde		145
Overvoltage Protector (up to 35 V, 10 A)				42092-066	Micropac			UC3903	Unitorde		
42092-1010	Micropac		15	42092-076	Micropac			Power Supply Control (voltage reference, quad over and under voltage sensing)			
42092-1210	Micropac			42092-086	Micropac			ULN8130A	Allegro Micro		
42092-1410	Micropac			42092-096	Micropac		85	ULN8131A	Allegro Micro		
42092-1610	Micropac			42092-106	Micropac			Power Supply Controller			
42092-1810	Micropac			42092-126	Micropac			GP6141	Gennum		
42092-2010	Micropac		20	42092-146	Micropac			Power Supply Controller Controller, Quasi Resonant, ZVS Controller			
42092-510	Micropac			42092-166	Micropac			GP6140	Gennum		
42092-610	Micropac			42092-186	Micropac		90	Power Supply Controller Controller (negative switch-mode)			
42092-710	Micropac			42092-206	Micropac			RC4292	Raytheon		150
42092-810	Micropac			Peak Detector (senses and holds peak)				RM4292	Raytheon		
42092-910	Micropac		25	PKD01	AD			Power Supply Controller (resonant mode)			
Overvoltage Protector (up to 35 V, 15 A)				PKD01A	† AD (3347)			CS3805	Cherry Semi		
42092-1015	Micropac			PKD01B	† AD (3347)			GP605	Gennum (3494)		
42092-1215	Micropac			AH503	◊ OEI			Power Supply Controller (resonant mode 10 kHz to 1 MHz)			
42092-1415	Micropac			AH504	◊ OEI			LD405	Gennum (3494)		
42092-1615	Micropac			5030A	OEI			Power Supply Controller (voltage reference, pulse generator and timing circuitry, error amp)			
42092-1815	Micropac		30	5032A	OEI			TL496C	TI		155
42092-2015	Micropac			5902	† OEI			Power Supply, Linear Regulator, High Efficiency			
42092-515	Micropac			Phase Control				UC1834	† Unitorde		
42092-615	Micropac			TLE3101	Siemens		100	UC1834/883B	† Unitorde		
42092-715	Micropac			TLE3102	Siemens			UC2834	Unitorde		
42092-815	Micropac		35	TLE3103	Siemens			UC3834	Unitorde		
42092-915	Micropac			TLE3104	Siemens			Power Supply Monitor			
Overvoltage Protector (up to 35 V, 20 A)				Power Control Zero Voltage Switch				MB3771	Fujitsu		160
42093-0520	Micropac			SL445A	GEC Plessey			Power Supply Monitor (w/timer)			
42093-0620	Micropac			Power Controller, Resonant Frequency				MB3773	Fujitsu		
42093-0720	Micropac			NE5580	Signetics		105	Power Supply Monitoring IC (monitors independent voltages)			
42093-0820	Micropac			Power Factor Controller				TDA4917A	Siemens		
42093-0920	Micropac			SG3561	SiliconG			Power Supply Supervisory Circuit			
42093-1020	Micropac			Power Factor Preregulator				TL7702A	◊ TI		
42093-1220	Micropac			UC3854	Unitorde			TL7705A	◊ TI		
42093-1420	Micropac			Power Failure Detector and Reset Generator (trips at 4.75V)				TL7709A	◊ TI		
42093-1620	Micropac		45	PCF1252-0	Signetics			TL7712A	◊ TI		165
42093-1820	Micropac			PCF1252-1	Signetics			TL7715A	◊ TI		
42093-2020	Micropac			PCF1252-2	Signetics		110	Power Supply Supervisory Circuit, Over-Voltage Monitor			
Overvoltage Protector (up to 35 V, 25 A)				PCF1252-3	Signetics			MC3423	TI		
42093-0525	Micropac			PCF1252-4	Signetics			Power Supply Supervisory Circuit (triple over/under voltage transient supervision)			
42093-0625	Micropac			PCF1252-5	Signetics			CA2862	Newbridge		
42093-0725	Micropac			PCF1252-6	Signetics			Power Supply Supervisory Input Comparator			
42093-0825	Micropac		50	PCF1252-7	Signetics			LAS4810	SemTech		170
42093-0925	Micropac			PCF1252-8	Signetics			LAS4820	SemTech		
42093-1025	Micropac			PCF1252-9	Signetics			Power Supply Supervisory/Over-Under Voltage Protection Circuit			
42093-1225	Micropac			Power Fault Monitor, Quad (monitors 4 dc voltages and the ac line)				MC3425	Motorola		
42093-1425	Micropac			SG1548	† SiliconG			Power-On Reset and Watchdog Controllers (for Computers, Controllers, Automotive)			
42093-1625	Micropac			SG2548	SiliconG			MAX698C	Maxim		
42093-1825	Micropac			SG3548	◊ SiliconG			Power-On Reset and Watchdog Controllers (for Computers, Controllers, Automotive)			
42093-2025	Micropac			Power Monitor and Watchdog Timer				MAX699C	Maxim		
Overvoltage Protector (up to 35 V, 30 A)				CS1232	◊ Crystal			Power Supply Control (voltage reference, over and under voltage sensing)			
42093-0530	Micropac			Power Supply Control (voltage reference, over and under voltage sensing)				XR1543	Exar		
42093-0630	Micropac			XR2543	Exar			XR2543	Exar		
42093-0730	Micropac			XR3543	Exar			SG1543	◊ † SiliconG		125
42093-0830	Micropac			SG1544	◊ † SiliconG			SG1544	◊ † SiliconG		
42093-0930	Micropac			SG2543	◊ SiliconG			SG2543	◊ SiliconG		
42093-1030	Micropac			SG2544	◊ SiliconG			SG2544	◊ SiliconG		
42093-1230	Micropac		65	Power Monitor and Watchdog Timer				Power Supply Control (voltage reference, over and under voltage sensing)			
42093-1430	Micropac			CS1232	◊ Crystal			XR1543	Exar		
42093-1630	Micropac			Power Supply Control (voltage reference, over and under voltage sensing)				XR2543	Exar		
(Continued)				(Continued)				XR3543	Exar		

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance * Typical Value * Behavioral Model Available ◊ Available in Surface Mount Package
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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Pulse Width Modulator, Regulating				Reference Voltage, ± 10 V (Cont'd)			
Precision Adjustable Shunt Reference (with trimmed bandgap reference)	AS431	Astec Semi		SG1526B	† SiliconG		55	AD2702S	† AD	(3333)	
Precision Low Dropout Linear Controller	UC1832	Unitrode		SG2526B	SiliconG			AD2702U	AD	(3333)	
UC1833	Unitrode			SG3526B	◊ SiliconG			AD2712K	AD	(3333)	
UC2832	Unitrode			Pulse Width Modulator, Single Uncommitted				AD2712L	AD	(3333)	110
UC2833	Unitrode		5	TL496	TI			AD2720	AD		
UC3832	Unitrode			TL497A	TI			REF01	◊† TeledyneC		
UC3833	Unitrode			Pulse Width Modulator, Single-Ended				VRE102C	Thaler		
Precision Reference, 10V.	TDC4169	◊† TRWLSI		UC1823	Unitrode		60	VRE102M	† Thaler		
Precision Voltage Reference				UC1823/883B	Unitrode			Reference Voltage, ± 10 V			
MPREF01A	MicroPwr			UC2823	Unitrode			AD688	AD	(3333)	115
MPREF01C	MicroPwr		10	UC3823	Unitrode			52101	† Micropac		
MPREF01D	MicroPwr							VRE104C	Thaler		
MPREF01E	MicroPwr			Pulse-Width Modulator Control System (for switching regulators, motor-speed controllers)				VRE104M	† Thaler		
MPREF01H	MicroPwr			XR2230	◊ Exar			VRE120C	Thaler		
MPREF01J	MicroPwr		15	Pulse-Width Modulator, Single Uncommitted			65	VRE120M	† Thaler		120
MPREF01Z	MicroPwr			LT1070	TI			VRE122C	Thaler		
MPREF02A	MicroPwr			MC34060	TI			VRE122M	† Thaler		
MPREF02C	MicroPwr			Pulse-Width Modulator, Dual Uncommitted				VRE130M	† Thaler		
MPREF02D	MicroPwr			SG2524	TI			Reference Voltage, ± 15 V			
MPREF02E	MicroPwr			SG3525A	TI			VRE135	Thaler		
MP5010G	MicroPwr		20	SG3527A	TI			Reference Voltage, ± 15 V			
MP5010H	MicroPwr			TL493	TI			VRE135M	† Thaler		125
MP5010J	MicroPwr			TL494	TI			Reference Voltage, Adjustable to 36V			
MP5010K	MicroPwr			TL495	TI			KA431	Samsung		
MP5010L	MicroPwr			TL594	TI			Reference Voltage (available in 13 ranges from 1.8 to 5.6V)			
MP5010M	MicroPwr			TL595	TI			SG103	† SiliconG		
MP5010N	MicroPwr			UC3846	TI			Reference Voltage (high temperature)			
				UC3847	TI			VRE120	Thaler		
Programmable, Off-Line, PWM Controller				PWM Control Circuit, High-Speed				Reference Voltage, Pin-Programmable Outputs (± 5 V, 5V and 10V, -5V and -10V dual outputs or 5V, -5V, 10V, -10V single outputs)			
UC1851	Unitrode			MB3769	Fujitsu			AD588A	AD	(3333)	
UC2851	Unitrode			PWM Control Circuit, Dual				Reference Voltage, Pin-Programmable Outputs (± 5 V, 5V and 10V, -5V and -10V dual outputs or 5V, -5V, 10V, -10V single outputs)			
Pulse Width Control Circuit	MB3759	Fujitsu		MB3775	Fujitsu			AD588B	AD	(3333)	130
Pulse Width Modulator (PWM) Control Circuit with On-Chip 5 Volt Precision Reference	TL594I	Motorola	30	PWM Controller, Programmable, Off Line				AD588C	AD	(3333)	
Pulse Width Modulator				UC1841	Unitrode			AD588S	† AD	(3333)	
HS3761RH	† Harris			UC2841	Unitrode			AD588T	† AD	(3333)	
Pulse Width Modulator Control Circuit (current mode)				UC3841	Unitrode			Reference Voltage, Programmable			
CS2844	Cherry Semi			PWM Power Supply IC (120 Vac input, isolated and regulated DC output)				TL430	TI		135
CS2845	Cherry Semi			PWR-SMP3	Power Integ			TL431	◊ TI		
CS3844	Cherry Semi			Reference and OP-AMP, 1.2V–6.3V				Reference Voltage (two terminal active circuit 1.220 V $\pm 5\%$)			
CS3845	Cherry Semi		35	TDC4611	◊† TRWLSI			MP5010	† MicroPwr		
Pulse Width Modulator Controller				Reference Voltage, -10 V				MP5010A	† MicroPwr		
UC3843	SGS-Thomson			REF08A	† AD	(3333)	85	LM113	† National		
UC3844	SGS-Thomson			REF08G	AD	(3333)		LM113-1	† National		
Pulse Width Modulator Controller, Programmable, Off-Line				REF08H	AD	(3333)		LM113-2	National		140
SG1840	† SiliconG			VRE101C	Thaler			LM313	National		
SG2840	SiliconG			VRE101M	† Thaler			9491AM	† TeledyneC		
SG3840	SiliconG			Reference Voltage, -10 V				9491B	TeledyneC		
Pulse Width Modulator, Current Mode				HS2701	Sipex-HSD			9491BM	TeledyneC		
SG1825	† SiliconG			Reference Voltage, -10 V/10.24V				Reference Voltage (two terminal active circuit) 1.235 V $\pm 2\%$			
SG2825	SiliconG			REF08	AD			LT1004C	LinearTech		145
SG3825	◊ SiliconG			Reference Voltage, ± -10 V				LT1004M	† LinearTech		
Pulse Width Modulator, Primary Side				VRE121C	Thaler			LM285-1	Motorola		
XRT469	Exar			VRE121M	† Thaler			LM385-1	Motorola		
UC3842A	Unitrode			Reference Voltage, ± 1.5 V				LM185	† National		
UC3843A	Unitrode			VRE200C	Thaler			LM285	National		150
UC3844A	Unitrode			VRE200M	† Thaler			Reference Voltage (two terminal active circuit) 1.8 to 5.6 V			
UC3845A	Unitrode		45	Reference Voltage, (± 5 V)				LM103	† National		
Pulse Width Modulator, Programmable Off-Line				LT1029AC	LinearTech			Reference Voltage, 1.2 V			
UC3851	Unitrode			LT1029AM	† LinearTech			SR12D	GEC Plessey		
Pulse Width Modulator (PWM) Control Circuit with On-Chip 5 Volt Precision Reference				LT1029C	LinearTech			Reference Voltage, 1.23 V			
MC33060A	Motorola			LT1029M	† LinearTech			AD589J	AD		
MC34060A	Motorola			VRE107C	Thaler			AD589K	AD		
MC35060A	† Motorola			VRE107M	† Thaler			AD589L	AD	(3333)	
TL594C	Motorola			Reference Voltage, ± 5 V				AD589M	AD	(3333)	
TL594M	† Motorola		50	VRE125C	Thaler			AD589S	† AD	(3333)	
				VRE125M	† Thaler			AD589T	† AD	(3333)	
				VRE127C	Thaler			AD589U	† AD	(3333)	160
				VRE127M	† Thaler			ICL8069	Harris		
				Reference Voltage, ± 10 V				ICL8069	Maxim		
				AD2702I	AD	(3333)	105				
				AD2702L	AD	(3333)					

† Mil Temp Range (-55° to 125° C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Reference Voltage, 2.5, 5.0, 7.5, and 10.0 V				Reference Voltage, 5 V (Cont'd)			
Reference Voltage, 1.23 V	ICL8069M	† Maxim	5	AD584J	◊ AD	(3333)	65	REF02D	◊ Maxim	125	
LM185-1	† National	AD584K		◊ AD	(3333)	REF02E		◊ Maxim			
LM285-1	National	AD584L		◊ AD	(3333)	REF02H		◊ Maxim			
LM385-1	◊ National	AD584S		◊† AD	(3333)	LM136-5		† National			
TSC8069	TeledyneC	AD584U		◊† AD	(3333)	LM136A-5		† National			
Reference Voltage, 1.26 V (two terminal active circuit)	ZN423	GEC Plessey	10	MX584J	Maxim	70	LM168-5	† National	130		
Reference Voltage, 1.8V	SG103-1.8	◊ SiliconG		MX584K	Maxim		LM236-5	National			
SG303-1.8	◊ SiliconG	MX584L		Maxim	LM236A-5		National				
Reference Voltage, 2.2V	SG103-2.2	† SiliconG		MX584S	† Maxim		LM268-5	National			
SG303-2.2	SiliconG	MX584T		† Maxim	LM336-5		◊ National				
Reference Voltage, 2.4V	SG103-2.4	† SiliconG	15	MX584U	† Maxim	75	LM336B-5	◊ National	135		
SG303-2.4	SiliconG	Reference Voltage, 2.5 V		AD	(3333)		LM368-5	National			
Reference Voltage, 2.45 V (two terminal active circuit)	VR182A	Datel		REF03	AD		REF02	Raytheon			
VR182B	Datel	REF43		AD	80		REF02A	Raytheon		140	
VR182C	Datel	LM136-25		† TI			REF02C	Raytheon			
ZN404	GEC Plessey	Reference Voltage, 2.5V (1% tolerance)	REF25Z	GEC Plessey			REF02D	Raytheon			
ZN458	GEC Plessey	20	Reference Voltage, 2.7V	SG103-2.7	† SiliconG	85	REF02E	Raytheon	145		
ZN458A	GEC Plessey		SG303-2.7	SiliconG	25		REF02H	Raytheon			
ZN458B	GEC Plessey		Reference Voltage, 2V	SG103-2.0	† SiliconG		REF02	◊† TeledyneC			
Reference Voltage, 2.5 V	AD1403		AD	SG303-2.0	SiliconG		TSC9495C	TeledyneC			
AD1403A	AD		(3333)	Reference Voltage, 3.3V	SG103-3.3	† SiliconG	90	VRE105C		Thaier	150
AD580J	AD	(3333)	SG303-3.3	SiliconG	30			VRE105M	† Thaier		
AD580K	AD	(3333)	Reference Voltage, 3.6V	SG103-3.6	† SiliconG	Reference Voltage, 5 V (trimmable output)		ZNREF050	GEC Plessey		
AD580L	AD	(3333)	SG303-3.6	SiliconG	35			Reference Voltage, 5.1V	SG103-5.1	† SiliconG	
AD580S	† AD	(3333)	Reference Voltage, 3.9V	SG103-3.9	† SiliconG	SG303-5.1		SiliconG	155		
AD580T	† AD	(3333)	SG303-3.9	SiliconG	95	Reference Voltage, 5.6V		SG103-5.6	† SiliconG		
AD580U	† AD	(3333)	Reference Voltage, 3V	SG103-3.0		† SiliconG	SG303-5.6	SiliconG	160		
REF03G	◊ AD	(3333)	SG303-3.0	SiliconG		40		Reference Voltage, 5V		REF05	AD
REF43B	† AD	(3333)	Reference Voltage, 4 to 6V Adjustable	KA336		Samsung	Reference Voltage, 5V (1% Tolerance)	REF50		GEC Plessey	
REF43F	AD	(3333)	Reference Voltage, 4 V (trimmable output)	ZNREF040		GEC Plessey	REF50Z	GEC Plessey		165	
REF43G	AD	(3333)	Reference Voltage, 4.3V	SG103-4.3	† SiliconG	Reference Voltage, 6.2 V	LM168-6	† National			
MX580J	Maxim	35	SG303-4.3	SiliconG	45		LM268-6	National			
MX580K	Maxim		Reference Voltage, 4.7V	SG103-4.7	† SiliconG	Reference Voltage, 6.2V (trimmable output)	ZNREF062	GEC Plessey			
MX580L	Maxim		SG303-4.7	SiliconG	50		Reference Voltage, 6.9 V Temperature Stabilized	LM199A	† LinearTech		
MX580M	Maxim		Reference Voltage, 5 V	ADREF02H	AD	100	LM399A	LinearTech	170		
MX580S	† Maxim	ADREF02A	† AD	50			LM129	† National			
MX580T	† Maxim	ADREF02E	AD				LM199	† National			
MX580U	† Maxim	ADREF02E	AD				LM199A	† National			
LM285-2	Motorola	40	ADREF02E	AD	55		LM299	National	175		
LM385-2	Motorola		AD586	AD	(3333)	LM299A	National				
MC1403	Motorola		REF02	◊† AD	(3333)	LM329	National				
MC1403A	Motorola		REF02A	◊† AD	(3333)	LM399	National				
MC1503	† Motorola	45	REF02C	◊† AD	(3333)	LM399A	National	180			
MC1503A	† Motorola		REF02D	◊ AD	(3333)	110	LM3999		National		
LM136-2	† National		REF02E	◊ AD	(3333)		Reference Voltage, 6.95 V	LM199	† LinearTech		
LM136A-2	† National		REF02H	◊ AD	(3333)		LM399	LinearTech			
LM185-2	† National	50	REF05A	AD	(3333)		Reference Voltage, 8.192V (precision)	AD689	AD		
LM236-2	National		REF05B	† AD	(3333)	115	Reference Voltage, 10 V	ADREF01A	† AD		
LM236A-2	National		REF02	† LinearTech	60		ADREF01E	AD			
LM285-2	National		REF02A	† LinearTech			ADREF01H	AD			
LM285-2	National		REF02C	LinearTech			AD587	AD			
LM336-2	◊ National	REF02D	LinearTech	MAX674C			Maxim				
LM368-2	National	55	REF02E	LinearTech	120		MAX674M	Maxim	185		
LM385-2	◊ National		REF02H	LinearTech			MX581J	Maxim			
TDB0136	SGS-Thomson		MAX675C	Maxim			MX581K	Maxim			
TDC0136	† SGS-Thomson		MAX675M	† Maxim			MX581L	Maxim			
SG1503	† SiliconG		60	REF02	◊ Maxim		120		MX581S	† Maxim	190
SG2503	SiliconG	REF02A		◊ Maxim	MX581T				† Maxim		
SG3503	SiliconG	REF02C		◊ Maxim	MX581U				† Maxim		
LM236-25	TI	(Continued)			LM169				† National		
LM336-25	TI				LM369				National		
LT1009M	TI					(Continued)					
Reference Voltage, 2.5 V (trimmable output)	ZNREF025	GEC Plessey									
Reference Voltage, 2.5 (1% Tolerance)	REF25	GEC Plessey									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)											
Reference Voltage, 10 V (Cont'd)				Reference Voltage, 10.24 V				RMS to DC Converter (Cont'd)			
VRE100C	Thaler			LH0071	National			4341	Burr-Brown	(3416)	
VRE100M	† Thaler			LH0071-0	National		70	LH0091	† National		
				LH0071-1	National			LH0091C	National		
				LH0071-2	‡ National						
Reference Voltage, 10 V, Kelvin Sensed Output (1 mV accuracy)				Reference Voltage, 10V				RMS to DC Converter (true RMS)			
MAX671C	Maxim			REF10	AD			AD737A	AD	(3347)	125
MAX671M	Maxim			REF102	Burr-Brown	(3417)		AD737B	AD	(3347)	
								AD737J	AD	(3347)	
								AD737K	AD	(3347)	
Reference Voltage, 10 V, Kelvin Sensed Output (2.5 mV accuracy)				HS2700	Sipex-HSD		75				
MAX670C	Maxim			HS2702	Sipex-HSD						
MAX670M	Maxim										
Reference Voltage, 10 V (trimmable output)				Reference Voltage (10V precision)				RMS-to-DC Converter			
REF101J	Burr-Brown			MX581	Maxim			AD536A	AD	(3347)	
								AD736	AD	(3347)	
REF101S	† Burr-Brown	(3417)		Reference Voltage, 1.26 V (1% tolerance)				Sample and Hold Circuits			
				REF12	† GEC Plessey			SHMHUMM	Datel	(3441)	130
ZNREF100	GEC Plessey			REF12Z	GEC Plessey			SHM45MM	Datel	(3441)	
								SHM486MM	Datel		
				Reference Voltage, 10 V				SHM6MM	Datel	(3441)	
				MAX672	Maxim		80	SHM945C	Datel	(3441)	
Reference Voltage, 10 V (or -10 V)				Reference Voltage, 10V (trimmable output)				Series Precision Binary Buffered Reference			
AD2700J	AD			52065	† Micropac			LH7071	National		135
AD2700L	AD			52098	† Micropac						
AD2700S	† AD			Reference Voltage, 2.5 V				Series Precision BCD Buffered Reference			
AD2700U	† AD			SR25D	GEC Plessey			LH7070	National		
AD2701J	AD	(3333)		LT1009	TI						
AD2701L	AD	(3333)	15					Series Regulator (positive/negative output, up to 200 mA)			
AD2701S	† AD	(3333)		Reference Voltage, 5 V				NJM2351	NJR		
AD2701U	† AD	(3333)		MAX673	Maxim		85				
AD2710K	AD	(3333)		Regulating Pulse width Modulator				Shunt Regulator			
AD2710L	AD	(3333)		LM1524D	† National			IR9431	Sharp		
AD2720C	AD			LM2524D	National			Shunt Regulator (adjustable precision)			
AD581J	AD	(3333)	20	LM3524D	National			HA17431	Hitachi		
AD581K	AD	(3333)		Regulating Pulse Width Modulator (7 to 40V operation)				Smart Power Switch			
AD581L	AD	(3333)		SG1529	† SiliconG			UC3720	Unitrode		140
AD581S	† AD	(3333)		SG2529	SiliconG						
AD581T	† AD	(3333)	25	SG3529	◊ SiliconG			SMPS Controller			
AD581U	† AD	(3333)						GL8901	GoldStar		
REF01	◊ AD			Regulator Controller (for high current low dropout regulator)				SMPS Controller, Current Mode			
REF01A	◊ AD	(3333)		UC1835	Unitrode			TSC170C	TeledyneC		
REF01C	◊ AD	(3333)		UC1836	† Unitrode			TSC170M	† TeledyneC		
REF01E	◊ AD	(3333)	30	UC2835	Unitrode			TSC171C	TeledyneC		
REF01H	◊ AD	(3333)		UC2836	Unitrode			TSC171M	† TeledyneC		145
REF10A	† AD	(3333)		UC3835	Unitrode			SMPS Controller, High Voltage			
REF10B	† AD	(3333)		UC3836	Unitrode			TSC9110	TeledyneC		
REF10	Burr-Brown	(3417)						TSC9111	TeledyneC		
				Regulator Pulse Width Modulator				SMPS Controller (1 watt)			
REF101	Burr-Brown		35	KA3524	Samsung			TSC9100	TeledyneC		
REF01	† LinearTech			Regulator Pulse Width Modulator (dual source/sink output drivers)				TSC9101	TeledyneC		
REF01A	† LinearTech			KA3525A	Samsung			TSC9102	TeledyneC		150
REF01C	LinearTech							Start-Up Controller, Off-Line			
REF01E	LinearTech			Reset IC/Low-Reset Input Voltage Detection				SG1540	† SiliconG		
REF01H	LinearTech			M51945A	Mitsubishi			SG2540	SiliconG		
MX2700J	Maxim			M51945B	Mitsubishi		100	SG3540	◊ SiliconG		
MX2700L	Maxim							Supervisory Power Supply Circuit (non-inverting voltage detector)			
MX2700S	Maxim			Reset IC/Low-Reset Supply Voltage Detection w/Delay				MAX8211	Maxim		
MX2700U	Maxim			M51951A	Mitsubishi			MAX8212	Maxim		155
MX2701J	Maxim			M51951B	Mitsubishi						
MX2701K	Maxim		45	M51953A	Mitsubishi			Supply Voltage Supervisor			
MX2701L	Maxim			M51953B	Mitsubishi			TL7702AM	◊ † TI		
MX2701S	† Maxim			M51954A	Mitsubishi		105	TL7705AM	◊ † TI		
MX2701U	† Maxim			M51954B	Mitsubishi			Switch Mode Power Supply Circuit (Switches up to 300 kHz)			
MX2710L	Maxim			Resonant mode power supply controller, (active high driver output)				TDA4918A	Siemens		
REF01	◊ Maxim			GP6041	Gennum			Switched Mode Power Supply Control Circuit (for single-ended and push-pull supplies)			
REF01A	◊ Maxim			Resonant mode power supply controller, (active low driver output)				TDA4700	Siemens		
REF01C	◊ Maxim			GP6040	Gennum	(3494)		TDA4718	Siemens		
REF01D	◊ Maxim			Resonant-Mode Controller				TDA4718A	Siemens		160
REF01E	◊ Maxim			UC1860	Unitrode		110				
REF01H	◊ Maxim			UC2860	Unitrode			Switched Mode Power Supply Control Circuit (push-pull output)			
LH0070	† National			UC3860	Unitrode			TDA4714A	Siemens		
LM168-10	† National							TDA4714B	Siemens		
LM268-10	National			RMS to DC Converter				TDA4716	Siemens		
LM368-10	National			AD536AJ	AD	(3347)		TDA4716A	Siemens		165
REF01	Raytheon			AD536AX	AD	(3347)					
REF01A	Raytheon			AD536AS	† AD	(3347)	115	Switching Regulator Power Output Stages, Negative Inputs (60 V)			
REF01C	Raytheon			AD636J	AD	(3347)		SM635	† SiliconG		
REF01D	Raytheon			AD636K	AD	(3347)		SM636	† SiliconG		
REF01E	Raytheon			AD637J	AD			SM637	† SiliconG		
REF01H	Raytheon			AD637K	AD	(3347)		SM655	† SiliconG		
R675B-1	† Sipex-HSD		65	4340	Burr-Brown		120				
TSC9496C	TeledyneC										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Voltage Converter, Inverting, -12V or Programmable	MAX636C MAX636M	Maxim † Maxim		Voltage Detector, 4.295 to 4.605	S8054AR	Seiko Instr	90
Switching Regulator Power Output Stages, Negative Inputs (80 V) (Cont'd)				Voltage Converter, Inverting, -15V or Programmable	MAX637C MAX637M	Maxim † Maxim		Voltage Detector, 4.595 to 4.905	S8054AO	Seiko Instr	
	SM656	† SiliconG		Voltage Converter (positive to negative)	ICL7662 Si7661	◊ † Maxim ◊ † Maxim	50	Voltage Detector, 4.895 to 5.205	S8054AY	Seiko Instr	
Switching Regulator Power Output Stages, Positive Inputs (60 V)	SM625	† SiliconG		Voltage Converter, Step-Down, 5V or Programmable	MAX638C MAX638M	Maxim † Maxim		Voltage Detector, 1.8V ± 2.4%	S8017AL	Seiko Instr	(3622)
	SM626	† SiliconG	5						S80718AL	Seiko Instr	(3622)
	SM627	† SiliconG		Voltage Converter, Step-Up, +5V or Programmable	MAX631C MAX631M MAX641C MAX641M	Maxim † Maxim Maxim † Maxim		Voltage Detector, 1.9V ± 2.4%	S80719AL	Seiko Instr	(3622)
	SM645	† SiliconG									95
	SM646	† SiliconG		Voltage Converter, Step-Up, +12V or Programmable	MAX632C MAX632M MAX642C MAX642M	◊ Maxim † Maxim Maxim † Maxim		Voltage Detector, 2.1V ± 2.4%	S80721AL	Seiko Instr	(3622)
	SM647	† SiliconG									
Switching Regulator Power Output Stages (10 amp negative)	SM670	† SiliconG	10	Voltage Converter, Step-Up, +15V or Programmable	MAX633C MAX633M MAX643C MAX643M	◊ Maxim † Maxim Maxim † Maxim		Voltage Detector, 2.295-2.505V	S8052HN	Seiko Instr	(3622)
	SM671	† SiliconG									60
	SM672	† SiliconG		Voltage Converter, Switched Capacitor	LTC1044M	TI		Voltage Detector, 2.5V ± 2.4%	S80725AL	Seiko Instr	(3622)
Switching Regulator Power Output Stages (10 amp positive)	SM660	† SiliconG									
	SM661	† SiliconG		Voltage Converter, 5 to ±10V	MAX680C MAX680E MAX680M	Maxim Maxim † Maxim		Voltage Detector, 2.595-2.805V	S8052AN	Seiko Instr	(3622)
	SM662	† SiliconG									65
Switching Regulator, PWM Controller	HA16664	Hitachi	15	Voltage Detector	MB3761	Fujitsu		Voltage Detector, 2.7V ± 2.4%	S80727AN	Seiko Instr	(3622)
	HA16666	Hitachi									100
Switching Regulator (5 A)	CS1070	Cherry Semi		Voltage Detector, Indicator, Regulator, (programmable zener)	ICL8211C ICL8211M ICL8212C ICL8212M	◊ Harris ◊ † Harris ◊ Harris ◊ † Harris		Voltage Detector, 2.8V ± 2.4%	S80728AN	Seiko Instr	(3622)
Track and Hold Amplifier	THC4940	TRWLSI									
Track and Hold Amplifier, 12-Bit	LH4860	National		Voltage Detector	S8051AN	Seiko Instr	(3622)	Voltage Detector, 2.895-3.105V	S8053HN	Seiko Instr	(3622)
Transient Suppressor	L3121	SGS-Thomson	20								
	L3122	SGS-Thomson		Voltage Detector	S8052AL	Seiko Instr	(3622)	Voltage Detector, 3.0V ± 2.4%	S80730AL	Seiko Instr	(3622)
Transient Voltage/Current Suppressor	L3101	SGS-Thomson									
Transient Voltage Suppressor	LS5018	SGS-Thomson	25	Voltage Detector, 0.995-1.105V	S8051AB	Seiko Instr		Voltage Detector, 3.1V ± 2.4%	S80731AL	Seiko Instr	(3622)
	LS5060	SGS-Thomson									
	LS5120	SGS-Thomson		Voltage Detector, 0.995 to 1.105	S8051AR	Seiko Instr		Voltage Detector, 3.2V ± 2.4%	S80732AN	Seiko Instr	(3622)
Transient Voltage Suppressor, 270 V, 1.3W	TPA270	SGS-Thomson									75
Transient Voltage Suppressor, 270 V, 20W	TPC270	SGS-Thomson		Voltage Detector, 1.095 to 1.205	S8051H	Seiko Instr		Voltage Detector, 3.3V ± 2.4%	S80733AL	Seiko Instr	(3622)
Transient Voltage Suppressor, 270 V, 5W	TPB270	SGS-Thomson									
Transient Voltage Suppressor, 62 V, 1.3W	TPA62	SGS-Thomson	30	Voltage Detector, 1.795 to 2.005	S8052AB	Seiko Instr		Voltage Detector, 3.4V ± 2.4%	S80734AN	Seiko Instr	(3622)
Transient Voltage Suppressor, 62 V, 20W	TPC62	SGS-Thomson									
Transient Voltage Suppressor, 62 V, 5W	TPB62	SGS-Thomson		Voltage Detector, 1.995 to 2.205	S8052AR	Seiko Instr		Voltage Detector, 3.5V ± 2.4%	S80735AL	Seiko Instr	(3622)
Undervoltage Sensing Circuit (for 3V or 5V power supplies)	MC33164	Motorola									80
	MC34164	Motorola		Voltage Detector, 2.195 to 2.405	S8052AO	Seiko Instr		Voltage Detector, 4.0V ± 2.4%	S80740AL	Seiko Instr	(3622)
Voltage Converter, +5V to ±5V	Vi7660-1	Datei	35								
	Vi7660-2	Datei		Voltage Detector, 2.395 to 2.605	S8052AY	Seiko Instr		Voltage Detector, 4.1V ± 2.4%	S80741AL	Seiko Instr	(3622)
	LTC1044C	LinearTech									110
	LTC1044M	† LinearTech		Voltage Detector, 2.595 to 2.805	S8053AB	Seiko Instr		Voltage Detector, 4.5-4.7V	S8054HN	Seiko Instr	(3622)
	ICL7660C	◊ Maxim									
	ICL7660M	◊ Maxim		Voltage Detector, 2.795 to 3.105	S8053HB	Seiko Instr		Voltage Detector, 4.5V ± 2.4%	S80745AL	Seiko Instr	(3622)
	Si7660C	Siliconix	40								
Voltage Converter, +5V to -5V	ICL7660	◊ Harris		Voltage Detector, 2.895 to 3.105	S8053AR	Seiko Instr		Voltage Doubler/Inverter, 1.5-10V to 3 to 20V or -1.5 to -10V.	ICL7660 Si7660A Si7661A Si7661C TSC7660	Maxim Siliconix Siliconix Siliconix TeledyneC	115
Voltage Converter, converts +4.5 to +20V to -4.5 to -20V	ICL7662C ICL7662M	Harris Harris									
Voltage Converter, Inverting, -5V or Programmable	MAX635C MAX635M	Maxim † Maxim	45	Voltage Detector, 3.095 to 3.405	S8053AO	Seiko Instr		Voltage Level Alarm	3041	Adv Analog	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Power Supply Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Miscellaneous (Cont'd)				Voltage to Frequency Converter (Cont'd)				Voltage-to-Frequency Converter (10 kHz precision)			
Voltage Level Alarm, Quad	3040	Adv Analog		4736HR	† TeledyneC			4715	TeledyneC		
Voltage Monitor (battery manager)	DS1259	◊ Dallas		4739	TeledyneC		55	Voltage-to-Frequency Converter (100 kHz precision)	4709	TeledyneC	
Voltage Monitor (battery manager with lithium cell)	DS1260	Dallas		4743	TeledyneC			Voltage-to-Frequency Converter (4100 kHz)	4703	TeledyneC	
Voltage Monitor (power monitor)	DS1231	◊ Dallas		Voltage to Frequency Converter (2 MHz)				Zero Voltage Switch			
Voltage Monitor (with watchdog or activity timer)	DS1232	◊ Dallas	5	AD652A	AD	(3326)		KA2804	Samsung		115
Voltage Regulator (low drop out)	MAX667C	Maxim		AD652B	AD	(3326)		Single Chip Power Supply, 5V to 24V output	HV2405E	Harris	
	MAX667M	† Maxim		AD652J	AD	(3326)		Single-Chip Power Supply (120 Vac input, 5V output@50 mA)			
Voltage Regulator (low power)	MAX666C	Maxim		AD652K	AD	(3326)					
	MAX666M	† Maxim		AD652S	† AD	(3326)	60				
Voltage Regulator (3-terminal positive)	LM323	Samsung	10	Voltage to Frequency/Frequency to Voltage Converter							
Voltage Regulator, 5 V (w/fail detection, watchdog timer and reset)	HA1835	Hitachi		A8400	Adv Analog						
Voltage Regulator, 110/220 Vac to 5Vdc, Adjustable output 1.3V to 10V at 50mA Over/under Voltage Detection, Full-wave Rectification	MAX600	Maxim		A8402	Adv Analog						
	MAX602	Maxim		AD650J	AD	(3326)					
	MAX610C	Maxim		AD650K	AD	(3326)	65	Dual Output Switchmode Regulator (+5 to ±12V or ±15V)	MAX742	◊† Maxim	
	MAX610M	† Maxim	15	AD650S	† AD	(3326)		Dual Over/Under-Voltage Detector			
	MAX612C	Maxim		VFC42	Burr-Brown			ICL7665	◊ Maxim		120
	MAX612M	† Maxim		VFC42M	† Burr-Brown	(3422)		ICL7665A	◊ Maxim		
Voltage Regulator, 110/220 Vac to 5Vdc, Fixed output, Variable Microprocessor Reset Half-wave rectification	MAX601	Maxim		VFC52	Burr-Brown			ICL7665B	◊ Maxim		
	MAX611C	Maxim		VFC52M	† Burr-Brown	(3422)	70	Quad OP-AMP and reference, 1.2V–6.3V	TDC4614	◊† TRWLSI	
	MAX611M	† Maxim	20	VFC62	Burr-Brown	(3422)		Three-Phase PWM Waveform Generator	MA818	GEC Plessey	
Voltage Sensing Circuit	SG1542	† SiliconG		XR4151	◊ Exar			10A Switchmode Power Supply IC	L4970	SGS-Thomson	
	SG2542	SiliconG		LM131	† National			12 Bit, 1.25 MHz A/D Evaluation Board	ADC8500-1	Datel	125
	SG3542	◊ SiliconG		LM131A	† National		75	2A Switchmode Power Supply IC	L4972	SGS-Thomson	
Voltage Supervisor IC	TL7705/A	SGS-Thomson		LM231	National				L4972D	SGS-Thomson	
Voltage to Frequency Converter	VFC3802	Adv Analog		LM231A	National			3.5A Switchmode Power Supply IC	L4974	SGS-Thomson	
	VFC3805	Adv Analog		LM331	National			5A Switchmode Power Supply IC	L4975	SGS-Thomson	
	VFC3810	Adv Analog		LM331A	National			7A Switchmode Power Supply IC	L4977	SGS-Thomson	130
	ADVFG32	AD		RC4151	Raytheon						
	AD537J	AD	(3326)	RC4152	Raytheon						
	AD537K	AD	(3326)	RC4153	Raytheon						
	AD537S	† AD	(3326)	RM4151	† Raytheon						
	AD651	AD		RM4152	† Raytheon						
	AD651A	AD		RM4153	† Raytheon						
	AD651B	AD		TSC9400	TeledyneC		85				
	AD651J	AD		TSC9401	TeledyneC						
	AD651K	AD		TSC9402	TeledyneC						
	AD651S	† AD		4780	TeledyneC						
	AD654	AD	(3326)	4781	TeledyneC						
	VFC100	Burr-Brown	(3422)	4782	TeledyneC		90				
	VFC32	Burr-Brown	(3422)	9400	TeledyneC						
	VFC320	Burr-Brown	(3422)	9401	TeledyneC						
	TDB0131	SGS-Thomson		9402	TeledyneC						
	IR9331	Sharp		Voltage-to-Current Converter/Transmitter							
	4731	† TeledyneC		XTR110	Burr-Brown	(3413)					
	4731HR	† TeledyneC		Voltage-to-Frequency and Frequency-to-Voltage Converter							
	4732	TeledyneC		MX650	Maxim		95				
	4732HR	† TeledyneC		Voltage-to-Frequency Converter							
	4733	† TeledyneC		ADVFC32	AD	(3326)					
	4733HR	TeledyneC		VFC110	Burr-Brown	(3422)					
	4734	TeledyneC		VFC121	Burr-Brown	(3422)					
	4734HR	† TeledyneC									
	4735	† TeledyneC		VFQ1C	Datel		100				
	4735HR	† TeledyneC		VFQ1R	Datel						
				VFQ2C	Datel						
				VFQ3C	Datel						
				Voltage-to-Frequency Converter (synchronized to external clock)							
				VFC101J	Burr-Brown	(3422)					
				VFC101K	Burr-Brown	(3422)					
				Voltage-to-Frequency Converter (1 MHz precision)							
				4705	TeledyneC		105				
				Voltage-to-Frequency Converter (5 MHz precision)							
				4707	TeledyneC						
				Voltage-to-Frequency Converter (10 kHz)							
				4701	TeledyneC						
				4713	TeledyneC						
				4721	TeledyneC						
				4723	TeledyneC		110				
				4725	TeledyneC						

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Codec/Filter, μ Law	ETC5054	SGS-Thomson		Compander (channel 1 \pm compander, channel 2 \pm expander, compressor)	SA575	Signetics (3668)		Crosspoint Switch (4x4x2 with control memory)	CD22101	Harris	
Codec/Filter, μ Law, Serial Output with Power Amplifiers	ETC5064	SGS-Thomson		Compander (internally configured as expander and compressor)	SA577	Signetics (3669)	45		CD22102	Harris	
Codec/Filter, A-Law	MB6022	Fujitsu		Companor IC	MB3121	Fujitsu		Crosspoint Switch, 8-Channel	DS1277	Dallas	
	S3506	Gould AMI		Companor (signal expander/compressor)	XR2216	Exar		Crosspoint Switch (8x4 matrix)	MT8804A	Mitel	
	MT8961	Mitel	5		NE570	Signetics		Crosspoint Switch (8x8x1 expandable, 2 Gb/s)	10G050	TriQuint	85
	MT8963	Mitel			NE571	Signetics		Crosspoint Switch, 8x8x1 (with control memory)	CD54HC22106	Harris	
	MT8965	Mitel			NE572	Signetics			CD74HCT22106	Harris	
	F30S67	National			SA571	Signetics			CD74HC22106	Harris	
	TP3057	National	10		SA572	Signetics		Crosspoint Switch (8x12 matrix)	MT8812	Mitel	
	TP3057-1	National		Companor, Unity Gain Level Programmable	NE577	Signetics (3669)		Crosspoint Switch, 12x8	CD22M093	Harris	90
	TP3067	National			NE578	Signetics (3670)		Crosspoint Switch, 12x8 (with control memory)	KT8593	Samsung	
	MSM6962RS	OKI (3606)		Comparator Circuit (noise reduction for cellular phones)	TK10651	Toko	55		SS178A093	SiliconSys (3688)	
	ETC5057	SGS-Thomson		Compression/Expansion Processor (with image bit-boundary processing)	AM7971	AMD		Crosspoint Switch, 16x8	CD22M3493	Harris	
	SC11302	Sierra	15	Conference Trunk, Serial PCM Interface (for six telephones/persons)	S3547	Gould AMI			CD22M3494	Harris	
	TCM29C17	TI		Control Unit with Parallel Interface	L3090	SGS-Thomson	20	Crosspoint Switch (16x16x1, 2 Gb/s)	10G051	TriQuint	95
	TCM2917	TI		Control Unit with Parallel/Serial Interface	L3030	SGS-Thomson		Crosspoint Switch (32x32 matrix)	SC11320	Sierra	
Codec/Filter, A-Law Companding	T7517	AT&T		Control Unit with Serial Interface	L3010	SGS-Thomson		Crosspoint Switch (8x8 matrix)	129EC	AT&T	60
Codec/Filter, A-Law, Parallel Interface	SC11306	Sierra		Convolutional Encoder and Viterbi Decoder	ST15268	STEL	25	CTCSS (continuous tone-controlled squelch system) Encoder/Decoder	MC4137	NEC	
Codec/Filter, A-Law, Serial Interface, High Output Drive	SC11312	Sierra		Convolutional Encoder/Viterbi Decoder, 20 Mb/s, K = 7	STEL2020	STEL (3703)			MC4138	NEC	
Codec/Filter, A-Law, Serial Output with Power Amplifiers	ETC5067	SGS-Thomson		Convolutional Encoder/Viterbi Decoder, 256 kb/s, K = 7	STEL5269	STEL (3703)		CTCSS Encoder	MX315	MX-COM	100
Codec/Filter, A-Law Synchronous	MB6026	Fujitsu		Cordless Telephone Base Subsystem (audio processing and tone signalling on one chip)	PCT13	OnChip Sys		CTCSS Encoder/Decoder	MX365	MX-COM	
CODEC/Filter Combo, μ -Law	TP3068	National		Cordless Telephone Handset Subsystem (audio processing and tone signalling on one chip)	PCT14	OnChip Sys	65	Current Regulator (for PABX current sources, telephone line terminations, 10 mA rating)	IXCP10M35	IXYS	
CODEC/Filter Combo, A-Law	TP3069	National		Correlator/Accumulator, High Rate	STEL2410	STEL (3703)	30		IXCP100M35	IXYS	
Codec Filter (D3/D4 ans CCITT spec)	KT3040	Samsung		Cross Point Switch (8x8 Video)	MAX465	Maxim		Current Sensing/Voltage Sensing and Ring Detect Interface	CH1809	Cermetek	105
	KT3040A	Samsung		Crosspoint Matrix Analog Switch (12x8)	M093	SGS-Thomson		DAA Modem Interface	CH1817	Cermetek	
Codec/Filter, PCM	T7513A	AT&T		Crosspoint Matrix Analog Switch (12x8) CMOS	M34930	SGS-Thomson		DASL, Digital Adaptor for Subscriber Loops	TP3402	National	
Codec/Filter (pin selectable μ -Law or A-Law)	T7513	AT&T		Crosspoint Matrix Analog Switch (16x8) CMOS	M3494	SGS-Thomson		Data Access Arrangement Circuit	CH1816	Cermetek	
	TCM29C13	TI		Crosspoint Matrix Analog Switch (12x8) CMOS	M3493	SGS-Thomson	35		CH1840	Cermetek	
Codec/Filter, Dual, μ -Law or A-Law (Pin Selectable)	T7512	AT&T		Crosspoint Matrix Analog Switch (12x8) CMOS	M3493	SGS-Thomson		Data Access Arrangement Circuit (BABT approved)	CH1828	Cermetek	110
CODEC, Military Delta Modulation	MX629	MX-COM		Crosspoint Switch, CCITT G732	MA811	GEC Plessey			CH1830	Cermetek	
Codec, PCM with Filter	TCM29C13M	TI		Crosspoint Switch (double 4x4 matrix)	RC4444	Raytheon		Data Access Arrangement Circuit (DAA)	CH1810	Cermetek	
Codec, PCM with Filters	T7522A	AT&T			RM4444	Raytheon			CH1818	Cermetek	
	7522	Rochester		Crosspoint Switch for PBX	U145M	AEG Corp	75		CH1832	Cermetek	
Codec, PCM with Filters (A/D, D/A converters, prog. slope filters with prog. gains)	T7540	AT&T		Crosspoint Switch (2x8 matrix)	M089	SGS-Thomson		Data Access Arrangement Circuit, Voice Data	CH1811	Cermetek	115
Codec, PCM with Filters (pin selectable μ -Law or A-Law operation)	T7513B	AT&T		Crosspoint Switch, 4x4	KT8592	Samsung	40		XE0002	XECOM	
Codec, PCM with Filters (with sigma delta ADC and DAC, 12-bit linearity)	T7525	AT&T			M089	SGS-Thomson			XE1112	XECOM	
Codec, Pin Selectable μ -Law or A-Law	ZNPCM1	GEC Plessey		Crosspoint Switch (4x4 matrix with control memory)	CD22100	Harris		Data Access Arrangement (provides a direct connect telephone line interface)	XE0004	XECOM	
	S291	Siemens			MC142100	Motorola		Data Access Arrangement Unit (provides interface for voice, modem and fax to the Public Switched Telephone Network - Central Office)	XE0007	XECOM	
Codec, Programmable PCM with Hybrid-Balance Filter	T7570	AT&T			M22100	SGS-Thomson	80				
Codec, Transition Encoded Modulation	MT8950	Mitel									
Code μ Law Single Chip with Filters	MB6024A	Fujitsu									
Coded Data Transceiver (Manchester format)	AM7960	AMD									
Communication Terminal Module	EF7333	SGS-Thomson									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Data Access Arrangement, Wide Band	XE0005	XECOM		Dialer, Pulse/Tone	XRT5990	Exar		Dialer, Pulse/Tone with 20 Memories (one-touch/two-touch dial)	LR48063	Sharp	
	XE0006	XECOM			MB87003	Fujitsu			LR48064	Sharp	
Data Buffer, 212A	XR2125	Exar			MB87004	Fujitsu		Dialer, Pulse/Tone with 20 One Touch Dial Memories	LR48067	Sharp	105
Data Link Controller (controls link level for CCITT X.25 protocol)	WD2512	Western			S7230	Seiko Instr					
	WD2512	Western			S7235	Seiko Instr					
Data Link Controller (synchronous for HDLC, SDLC, ADCCP, CCITT X.25, ISDN, and LAPD protocols)	WD25C17	Western			S7237	Seiko Instr					
	WD25C17	Western		Dialer, Pulse/Tone (CMOS)	LR48061	Sharp		Dialer, Pulse with Last Number Redial	MA522	GEC Plessey	
Data Processor for Cellular Radio (part of chipset)	UMA1000	Signetics			LR48221	Sharp			MA542	GEC Plessey	
	UMA1000	Signetics			LR48222	Sharp			52981	GEC Plessey	
Data Set Interface, Asynchronous/Synchronous Converter	MC145428	Motorola			LR48231	Sharp			LR40981A	Sharp	110
	MC145428	Motorola			LR48232	Sharp			LR40982	Sharp	
Decoder, Forward Error Correction (decodes convolutional codes with Viterbi decoding algorithm, 2.1 Mbps)	SCOM2001B	Spancom		Dialer, Pulse/Tone for Binary Code Input	LR4809	Sharp			LR40991	Sharp	
	SCOM2001C1	Spancom			LR4809	Sharp			LR40992	Sharp	
	SCOM2001C2	Spancom		Dialer, Pulse/Tone Keypad Switchable with Matched Speech Circuit	MA550	GEC Plessey			LR40993	Sharp	
Dejitter Buffer, Quad (processes four DS1 signals)	TXC-03351	TranSwitch			MA552	GEC Plessey			LR40994	Sharp	
	TXC-03351	TranSwitch		Dialer, Pulse/Tone Keypad Switchable with Redial	MA552	GEC Plessey		Dialer, Pulse with Last Number Redial and Speech Network	MA528	GEC Plessey	115
Delta Modulation Codec	MX609	MX-COM			MA552	GEC Plessey		Dialer, Pulse with Redial (pin 2 is tone output)	KS58D05	Samsung	
	MX609	MX-COM		Dialer, Pulse/Tone Repertory (nine 18-digit memory)	MC145412	Motorola		Dialer, Pulse with Redial (pin 2 is Vref)	KS58C05	Samsung	
Delta Modulation System, Continuously Variable Slope	HC55536	Harris			MC145413	Motorola			KS58E05	Samsung	
	HC55564	Harris		Dialer, Pulse/Tone Repertory, 4 Number	LR4807A	Sharp		Dialer, Pulse with Redial (32 digit redial)	KS58E05	Samsung	
	MC3417	Motorola			LR4807A	Sharp		Dialer, Pulse (with 16-bit FIFO)	M969	Teltone	120
	MC3418	Motorola		Dialer, Pulse/Tone Repertory, 10 Number	PBM3915	Ericsson		Dialer, Repertory	MK53761	SGS-Thomson	
Delta Modulation System, Exponentially Variable Stepsize Algorithm	CA2842	Newbridge			MA5272	GEC Plessey			MA5273	GEC Plessey	
	CA2842	Newbridge			MA5273	GEC Plessey		Dialer, Repertory, 10 Number	LR4173	Sharp	
Delta Sigma Modulator/Demodulator	ZNPCM2	GEC Plessey			MA5274	GEC Plessey			LR4174	Sharp	
	ZNPCM2	GEC Plessey			STC2580C	S-MOS		Dialer, Repertory, 20 Number, 9/18 Digit LCD Display Driver	RM9901	Ericsson	75
Dial Pulse Counter and Hook Monitor	M959	Teltone			MK5375	SGS-Thomson					
	M959	Teltone			MK5376	SGS-Thomson		Dialer, Switchable One-Touch Dialer	S7241	Seiko Instr	125
Dialer	LC7366	Sanyo			LR4803	Sharp					
	LC73711	Sanyo			TEL5453	STC		Dialer, Tone	LC7365N	Sanyo	
Dialer, Combined with Matched Speech Circuit	MA554	GEC Plessey		Dialer, Pulse/Tone Repertory, 21 Number	LR48066	Sharp			LR4087B	Sharp	
	MA554	GEC Plessey			LR48066	Sharp			LR4089B	Sharp	
Dialer, DTMF/Pulse	MB87008A	Fujitsu		Dialer, Pulse/Tone Repertory, 24 Number	MA5452	GEC Plessey			LR4091	Sharp	
	MB87009	Fujitsu			MA5453	GEC Plessey			LR4092	Sharp	
	MB87029	Fujitsu			MA547	GEC Plessey		Dialer, Tone/Pulse Switchable (with redial)	GM6390	GoldStar	80
	KS58A19	Samsung		Dialer, Pulse/Tone Repertory (10 number memory)	MC145512	Motorola			GM6390	GoldStar	
	KS58B19	Samsung			MC145512	Motorola		Dialer, Tone/Pulse Switchable (15 number memory)	GM6388	GoldStar	
	KS58C19	Samsung		Dialer, Pulse/Tone Switchable (CMOS)	LC7363N	Sanyo			GM6388	GoldStar	
	KS58D19	Samsung			LC7363N	Sanyo		Dialer, Tone with Last Number Redial	MA531	GEC Plessey	
	KS58D19	Samsung		Dialer, Pulse/Tone with Microprocessor Interface	525	GEC Plessey			MA531	GEC Plessey	
Dialer, DTMF/Pulse with Redial	PCD3310	Signetics			525	GEC Plessey		Dialer, Tone with Last Number Redial and Speech Network	MA530	GEC Plessey	
	PCD3310	Signetics		Dialer, Pulse/Tone (with four memories, one touch/three touch/dial)	LR48202	Sharp			MA530	GEC Plessey	
Dialer, DTMF/Pulse (with 10 number memory)	KS58A23	Samsung			LR48202	Sharp		Dialer, Tone with Speech Network and DC Line Voltage Regulator	LB1008A	AT&T	135
	KS58B23	Samsung		Dialer, Pulse/Tone with Last Number Redial	MB87007A	Fujitsu			MC34010A	Motorola	
	KS58C23	Samsung			MA5262	GEC Plessey			MC34011A	Motorola	
	KS58D23	Samsung			MA5263	GEC Plessey		Dialer, One-Key	UM95080	UMC	
	KS58E23	Samsung			MA5402	GEC Plessey			UM95080	UMC	
	KS58E22	Samsung			MA5403	GEC Plessey		Dialer, One-Touch Dial Control Circuit (10 repertory memory)	S7283A	Seiko Instr	90
Dialer, Pulse	XRT5992	Exar			MA5412	GEC Plessey			S7283	Seiko Instr	140
	MV4320	GEC Plessey			MA5413	GEC Plessey		Dialer, One-Touch Dial Controller	S7283	Seiko Instr	
	MV4322	GEC Plessey			MK5370	SGS-Thomson					
	MV4323	GEC Plessey			MK5371	SGS-Thomson		Dialer, 10 Memory Pulse	UM91611	UMC	95
	MV4325	GEC Plessey			MK53721	SGS-Thomson					
	MV4326	GEC Plessey			MK53731	SGS-Thomson		Dialer, Pulse with Redial	KS5805A	Samsung	
	MV4327	GEC Plessey			MK53762	SGS-Thomson			KS5805B	Samsung	
	S2560G	Gould AMI			TEL5048	STC		Digital Data Service Transceiver, All Rate Extended Range	LXT400	Level One	
	STC2560	S-MOS			TEL5413	STC			LXT400	Level One	
	STC2565	S-MOS		Dialer, Pulse/Tone (with LCD driver)	LR48106	Sharp		Digital Line Interface Controller	TP3120	National	145
	M761	SGS-Thomson			LR48106	Sharp			TP3122	National	
Dialer, Pulse and DTMF with Redial	PCD3310A	Signetics		Dialer, Pulse/Tone (with 10 number memory)	LR4801D	Sharp		Digital Loop Controller, CCITT 1.430 S-Interface Compatible	T7253	AT&T	
	PCD3310A	Signetics			LR4802A	Sharp					
Dialer, Pulse Repertory, 10 Number	MA5271	GEC Plessey			LR4802I	Sharp					
	MA5271	GEC Plessey		Dialer, Pulse/Tone (with 16 number memory)	LR48211	Sharp					
Dialer, Pulse Repertory, 20 Number	STC2570C	S-MOS			LR48211	Sharp					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Digital Network Interface Circuit (DNIC)	MT8972A	◊ Mitel		DS3 Integrated Line Receiver	T7295	AT&T		FAX Modem and Compression/Expansion Processor, 9600 bps Half-Duplex	DSPG4001	DSP Group	
Digital Network Interface Circuit (ISDN compatible)	MT8971	Mitel		DTMF/MF Channel Filter/Limiter (hybrid)	AMS3023	Aptek			DSPG4002	DSP Group	
Digital Signal Processor	S77C20	Gould AMI		DTMF/MF Detector/Timer (hybrid)	AMS3020	Aptek		FAX Pixel Processor (performs shading correction and image processing)	TC35180	Toshiba	70
	S7720	Gould AMI	(3498)	DTMF/MF Reference Reset (hybrid)	AMS3024	Aptek		FDDI Basic Media Access Controller	DP83261	National	
Digital Subscriber Controller	AM79C30	AMD		DTMF Oscillator	MB4507A	Fujitsu	40	FDDI Clock Distribution Device	DP83241	National	
	AM79C30A	AMD		DTMF Receiver	MB87017A	Fujitsu		FDDI Physical Layer Controller	DP83251	National	
Digital Switching Matrix (128x128)	M044	SGS-Thomson			UM9203	UMC		FDDI Physical Layer Device (conforms to ANSI X3T9.5)	T7351A	AT&T	
Digital Switching Matrix (256x256)	M088	SGS-Thomson		DTMF Receiver (CMOS)	LC7385	Sanyo		Fiber Optic Receiver	AM79H1000R	AMD	75
Digital Telephone Circuit (D-Phone)	MT8994	Mitel		DTMF Receiver (hex output code)	MC145436	Motorola	45	Fiber Optic Transceiver	AM79H2000X	AMD	
	MT8995	Mitel		DTMF Receiver with Dial Tone Suppression	KT3170	Samsung		Fiber Optic Transmitter	AM79H1000T	AMD	
Digital Telephone (D-Phone)	IMP8994/5B	IMP		DTMF Receiver (with supervisory tone detection)	MT3070	Mitel		Filter, Band Pass, Sixth Order	TS8550	SGS-Thomson	
Digital Telephone with HDLC (H-Phone)	IMP8992/3B	IMP			MT3071	Mitel		Filter, Band Pass, Eighth Order	TS8551	SGS-Thomson	
Digital Time/Space Crosspoint Switch	IMP8980	IMP		DTMF Tone Transceiver (with early detect and call-progress detection)	SSI75T2091	SiliconSys	(3688)	Filter, Bandpass (DTMF)	AMS3044	Aptek	80
	MT8981D	Mitel		DTMF Transceiver (call progress mode)	MT8880-1	Mitel			AMS3045	Aptek	
Digital Timer/Space Switch	MT8980D	◊ Mitel		E & M Signaling Circuit (replaces electromechanical relays and discrete components in signaling interface circuits)	LH1263A	AT&T			CH1295	Cermetek	
Digital Trunk Interface (CEPT)	MH89790	Mitel		Encoder/Decoder, Manchester (conforms to StarLAN specifications)	MK5033N	SGS-Thomson			CH1296	Cermetek	
	MT8979	Mitel		Ethernet Controller	NE86950B	Signetics	50		MT8865	◊ Mitel	
Digital Trunk Interface Circuit, CEPT	MT8978	◊ Mitel		Ethernet Encoder/Decoder	NE502A	Signetics		Filter, Bandsplit (DTMF)	MV8865	GEC Plessey	85
Digital Trunk Interface Circuit, DS1/ESF	MH89760	Mitel		Ethernet Interface Transceiver, Universal	LXT901	Level One			TT6177	Telitone	
Digital Trunk Interface, T1/ESF	MT8976	Mitel		Ethernet TP MAU with Remote Signaling	LXT908	Level One		Filter, C-Message (notch/program weighting)	RF5651A	EG&G-Reticon	
Digital Trunk PLL, T1/CEPT	MT8940	◊ Mitel		Ethernet Twisted Pair Receiver (implements IEEE 802.3 10 Base - T Media Attachment Unit)	NCR92C02	NCR	25	Filter, CAFIR (Cascadable Adaptive Finite Impulse Response)	DSP56200	Motorola	
Digital Trunk Transmit Equalizer, T1	MH89761	Mitel		Ethernet Twisted-Pair Media Attachment	LXT902	Level One		Filter, High Pass, Programmable	S3529	Gould AMI	
Driver/Receiver Combination, RS-232C, V-28	MC145406	Motorola		Ethernet Twisted-Pair to Coax Adapter	LXT906	Level One		Filter, High Pass, Third Order	TS8530	SGS-Thomson	90
DS1 Chip Set, Framer (provides line and frame format for DS1 and CEPT digital carrier systems)	T7229	AT&T		Exchange Power Controller, Quad (supplies power for up to four digital phone lines)	AM7938	AMD		Filter, High Pass, Sixth Order	TS8531	SGS-Thomson	
	229GB	AT&T		E1 CEPT/ISDN Primary Rate Interface Transceiver	LXT318	Level One			TS8532	SGS-Thomson	
DS1 Chip Set, Maintenance Buffer (provides microprocessor interface for 229GB Frame Buffer)	229FB	AT&T		E1 CEPT/ISDN Primary Rate Interface Transceiver	LXT319	Level One		Filter, Low Pass	RF5613A	EG&G-Reticon	
DS1 Chip Set, Receive Synchronizer (performs serial to parallel conversion on the serial data received from the framer)	257AU	AT&T		E1 CRC Framer/Formatter	LXP2181	Level One		Filter, Low Pass Butterworth, Eighth Order	TS8514	SGS-Thomson	
DS1 Chip Set, Transmit Formatter (converts 14 bits of parallel data into a serial stream)	257AL	AT&T		Facsimile/Data Modem Analog Front End (complete CODEC and filter)	NS32FX210	National		Filter, Low Pass Chebyshev, Eighth Order	TS8513	SGS-Thomson	95
DS1 Line Interface	T7289A	AT&T		FAX Controller, Band Compression and Expansion	M66330	Mitsubishi		Filter, Low Pass, Fifth Order	TS8510	SGS-Thomson	
	CS6152	Crystal		FAX Controller, Graphic Processing Controller	M66332	Mitsubishi		Filter, Low Pass Programmable	S3528	◊ Gould AMI	
	SSI78P233	SiliconSys	(3688)	FAX G2/G3 Modem (9600 bps)	LC8920	Sanyo		Filter, Low Pass Speech (dual, tunable)	MC145414	Motorola	
DS1 Line Interface (provides a line interface between the DS1 or DS1C cross-connect and terminal equipment circuits)	T7289	AT&T						Filter, Low Pass, Seventh Order	TS8511	SGS-Thomson	100
DS1 to VTI.5 Asynchronous Bus Interface (works at STS-1 or STS-3 byte rates)	TXC-04001	TranSwitch							TS8512	SGS-Thomson	
DS3 Framer (provides all processing to format a DS3 signal)	TXC-03401	TranSwitch	35					Filter, Notch	RF5612A	EG&G-Reticon	
								Filter, Notch, Sixth Order	TS8540	SGS-Thomson	
								Filter, PCM Receive	AMS3065	Aptek	
								Filter, PCM Transmit	AMS3064	Aptek	
								Filter, PCM Transmit/Receive	G8912B	◊ CMD Micro	105
									2912A	Intel	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Filter, PCM Transmit/Receive (Cont'd)				HDB3/AMI Encoder/Decoder				ISDN, S/T Bus Interface Circuit (implements the 4-wire S/T interface used to link voice/data ISDN terminals)			
TP3040	National			TCM2202	TI		45	AM2081	AMD		80
TP3040-1	National			TCM2222	TI			ISDN S/T Interface Device with GC (General Circuit Interface)	TP3421	National	
TP3040A	National			HDB3/AMI Equipment Line Interface				ISDN Subscriber Access Controller	PEB2085	Siemens	
TP3040A-1	National			TCM2203	TI			ISDN Subscriber Access Controller (ISAC-S)	AM2085	AMD	
MSM6912	OKI (3606)		5	TCM2204A	TI			ISDN Subscriber Access Controller (with UPO Interface)	AM20950	AMD	
ETC5040	SGS-Thomson			HDB3 Encoder	MJ1440	GEC Plessey		ISDN, T-1/CEPT PCM Transmitter	R8070	Rockwell	85
TCM2912B	TI			HDB3 to NRZ Binary Encoder/Decoder	MA815	GEC Plessey		ISDN Terminal Adapter Circuit (ITAC)	AM2110	AMD	
TCM2912C	TI			HDB3 Transcoder, with Error Detection (10 kb/s to 2.048 Mb/s)	CD22103A	Harris	50	ISDN Terminal Adaptor	PSB2110	Siemens	
Filter, Second-Order Switched Capacitor				HDLC Interface for ISDN	T7121	AT&T		ISDN, U interface Chip	MC145472	Motorola	
XR1010	Exar			High Compression Voice Module for Telecoms - 8 and 16 KBits/Sec Voice Compression and Expansion	CA16M801	Newbridge		ISDN, U-Interface Basic Access Transceiver, 144 kb/s Full Duplex (part of chip set)	T7260	AT&T	90
Filter, Switched Capacitor (triple telephone/communications filter)	RF6651A	EG&G-Reticon	10	HLDC Controller	MK5021	SGS-Thomson		T7261	AT&T		
Filter, Telecom/Datacom Instrumentation	XR1020	Exar		HSC Tone Encoder	MX013	MX-COM		ISDN U-Interface 2B1Q Transceiver	T7264	AT&T	
Filter/Tone Generator, Single Frequency Tunable Bandpass/Notch	S3526B	Gould AMI		IEEE 802.3 StarLAN Hub Controller	MK5030	SGS-Thomson	55	ISDN, User-Network Interface for ISDN Terminal Endpoints (supports CCITT I.430/ANSI T1.605 standard for ISDN basic access)	T7250B	AT&T	
Filter, Dual Switched Capacitor	LMF100	National		IEEE 802.3 StarLAN Manchester Encoder/Decoder	MK5035	SGS-Thomson		ISDN Dual Data Link Controller (DDLC)	MC145488	Motorola	
Filter, Fourth Order Switched Capacitor (Stand Alone Mode with RC or Crystal)	XR1001	Exar		Integraed Local Area Communications Controller (ILACC)	AM79C900	AMD		ISDN, Four-Port ISDN User-Network Interface Termination for Switches (NT/LT)	T7254	AT&T	
XR1003	Exar		15	ISDN ANSI Standard U-Interface Basic Access Transceiver Chip Set (144 kb/s)	T7262	AT&T		LAN, Advanced CSMA/CD Local Area Network Controller with 16-Bit Data Path	T7302	AT&T	95
XR1004	Exar			T7263	AT&T			LAN, ARCNET Chipset	NCR90C26	NCR	
XR1007	Exar			ISDN Basic Access Controller (full duplex, 4-wire operation)	YM7303	Yamaha		NCR90C32	NCR		
XR1008	Exar			ISDN Basic Access Echo-Cancelling 2B1Q U Transceiver	TP3410	National	60	Line Interface, CEPT1	T7288	AT&T	
Filter, Fourth-Order Switched Capacitor (Stand Alone Mode with RC or Crystal)	XR1002	Exar		ISDN Burst Transceiver Circuit	PEB2095	Siemens		Line Interface Circuit	L3000	SGS-Thomson	100
Filter, Sixth Order Switched Capacitor Butterworth (low pass)	MF6	National	20	ISDN, Burst Transceiver Circuit (full duplex for 2-wire transmission line)	AM2095	AMD		Line Interface Circuit, Duplex DS3 (B3ZS codec)	TXC-02001	TransSwitch	
Filter, Seventh Order, Programmable (medical telemetry)	HSCF24040	Signal Proc		ISDN Communications Controller (for LAPD protocol)	PEB2070	Siemens		Line interface (data access arrangement)	SSI73M376	SiliconSys (3688)	
Filter, Seventh-Order Elliptic Low Pass	XR1015	Exar		ISDN D-Channel Exchange Controller (4 PEB2070 ICCs)	PEB2075	Siemens	65	Line Interface, DS1/T1/CEPT	T7290	AT&T	
XR1016	Exar			ISDN Data Controller	AM79C32A	AMD		Line Interface (DS3)	SSI78P236	SiliconSys (3688)	
FM System (for cellular radio chipset)	NE605	Signetics (3665)		ISDN Digital Exchange Controller (IDEC)	AM2075	AMD		Line Interface, Receiver (for CEPT and T1 networks)	DS2187	Dallas	105
FM Transmitter (for cordless phones)	MC2831	Motorola	25	ISDN, Digital Multiplexed Interface (DMI) Link Layer Controller	R8071	Rockwell	30	Line Interface (STS-1)	SSI78P2361	SiliconSys (3688)	
Format Converter, 8-Bit	MA803	GEC Plessey		R8071A	Rockwell			Line Interface, Transmit (for CEPT and T1 networks)	DS2186	Dallas	
Frame Aligner/Time Slot Zero Receiver	MA808	GEC Plessey		ISDN Echo Cancellation Circuit	PEB20901	Siemens	35	Line Interface (34Mbit/s)	SSI78P2362	SiliconSys (3688)	
Frequency Discriminator (disconnects or switches phone upon detection of a specific tone)	LS7501	LSI Comp		PEB20902	Siemens			Line Sense Relay (senses telephone line current from 20 to 125 mA)	M949	Telton	
LS7502	LSI Comp			PEB2091	Siemens			Local Area Network Controller for ETHERNET	MK7990	SGS-Thomson	110
LS7503	LSI Comp			ISDN Echo Cancellation Circuit (IEC)	AM20901	AMD					
LS7504	LSI Comp			AM20902	AMD						
LS7505	LSI Comp			ISDN Echo Cancellation Circuit (IEC-Q)	AM2091	AMD	75				
LS7506	LSI Comp			ISDN, Line Interface Unit (interfaces to the R8070 T-1/CEPT PCM transceiver)	R8069	Rockwell					
LS7507	LSI Comp			ISDN Primary Access Transceiver (supports CEPT and T1 formats)	PEB2235	Siemens					
LS7508	LSI Comp			ISDN R Interface USART	TP3460	National					
LS7509	LSI Comp			ISDN S Interface Device	TP3420	National					
LS7510	LSI Comp										
FSK Demodulator/Tone Decoder	NJM2211	NJR									
FSK IF Amplifier, Detector	MC13055	Motorola									
FSK Receiver, Wideband	MC3356	Motorola	40								
Full-Duplex Scrambler for Cordless Telephone	MX118	MX-COM									
Gain Control Circuit with Balance Impedance Switching	MA571	GEC Plessey									
Hands-Free Circuit for All Range Sets	TEA7540	SGS-Thomson									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Local Area Network Coprocessor (implements CMSA/CD medium access control functions independently of CPU)	T7300	AT&T		Modem Circuit, Bell 103/212A, CCITT V.21 and V.22, 300/1200 bps	SC11016	Sierra		Modem Circuit, Controller for Sierra SC11006 Modem (2400 baud, MNP service classes 2-4)	SC11013	Sierra	
Loop Extender Circuit	MH89726	Mitel		Modem Circuit, Bell 103/212A, CCITT V.21/V.22	SC11004	Sierra		SC11019	Sierra		
	MH89728	Mitel		Modem Circuit, Bell 103 (300 bps)	STC9422C	S-MOS	40	Modem Circuit, Controller for 300/1200 bps modem	SC11007	Sierra	75
Loopback Control (2,713 Hz)	SC11330	Sierra		Modem Circuit, Bell 103 (3300 baud)	MC145443	Motorola		SC11008	Sierra		
Loud Speaker Amplifier	TEA7031	SGS-Thomson	5	Modem Circuit, Bell 202 or CCITT V.23	TCM3105	TI		Modem Circuit, Data Over Voice	MT8840	Mitel	
	TEA7531	SGS-Thomson		Modem Circuit, Bell 212A	CH1770	Cermetek		Modem Circuit, Device Set CCITT V.22 bis/21, Bell 212A 103 (with controller)	SSI73D2404	SiliconSys	
	TEA7532	SGS-Thomson		CD22212E	Harris			Modem Circuit, FAX Modem (9600 bps)	YM7109	Yamaha	
Manchester Decoder and Interface Chip	T7210A	AT&T		Modem Circuit, Bell 212A and CCITT V.22, DPSK	TS7515	SGS-Thomson	45	Modem Circuit, FSK Autodial Modem (Bell 103, 113, 108 and CCITT V.21 compatible)	AM79101	AMD	80
Manchester Encoder/Decoder	NCR92C05	NCR		Modem Circuit, Bell 212A Demodulator	XR2122	Exar		Modem Circuit, FSK Modulator/Demodulator	XR210	Exar	
Master Digital-Loop Transceiver, 80 kb/s	MC145422	Motorola	10	Modem Circuit, Bell 212A Modulator	XR2121	Exar		XR210M	Exar		
Master Digital-Loop Transceiver, 160 kb/s	MC145421	Motorola		Modem Circuit, Bell 212A or 103	F1212	National		Modem Circuit, Full Bell 212A/103 and CCITT V.21/V.22 Compatible, 1200/300bps	XE1212	XECOM	85
Memory Time Switch (time/space switch for large networks)	PEB2047	Siemens		Modem Circuit, Bell 300 Baud	MSM6946	OKI (3606)		XE1212L	XECOM		
Memory Time Switch (time/space switch for small networks)	PEB2046	Siemens		Modem Circuit, Bell 1200 baud	MSM6947	OKI (3606)	50	XE1214	XECOM		
Metering Pulse Detector (12 to 16 kHz)	AMS3089	Aptek		Modem Circuit, Bell 201/CCITT V.26 Compatible (2400 bps filter combo)	RM5636B	EG&G-Reticon		Modem Circuit, Full Bell 212A/103 Compatible, 1200/300 bps	XE1201	XECOM	
Metering Pulse Receiver (50 kHz common mode)	AMS3052	Aptek	15	Modem Circuit, Bell 212A, CCITT V.22	XR2130	Exar		XE1203	XECOM		
Military Delta Modulation Codec	MX619	MX-COM		Modem Circuit, CCITT	CH1263	Cermetek		Modem Circuit, Full Duplex 1200/300 bps (212A and 103 compatible)	PT212AT	OnChip Sys	
Modem Circuit, 1200 bps MSK (minimum shift keying)	MB87002	Fujitsu		CH1268	Cermetek			Modem Circuit, Full Duplex 1200/600 bps (V.22 compatible)	AV22	OnChip Sys	
Modem Circuit, Analog Front End for FAX modems	SC11030	Sierra		Modem Circuit, CCITT V.21/V.23, Bell 103/113/202/140	EF7910	SGS-Thomson	55	Modem Circuit, Full 2400/1200/300 bps Component Modem (CCITT V.22bis, V.22/V.21 and Bell 212A/103 compatible)	XE2400	XECOM	90
Modem Circuit, Analog Front End for G2 and G3 FAX Machines	TC35103	Toshiba		Modem Circuit, CCITT V.21/V.23, Bell 103/113/202/148	AM7910	AMD		Modem Circuit, Group III FAX, 2400 bps Data Modem	XE9624FD	XECOM	
Modem Circuit, Analog Front End for High-Speed V.26, V.27, V.29 and V.33 modems	SC11033	Sierra	20	Modem Circuit, CCITT V.21 with Power Down Mode (300bps)	STC9423C	S-MOS		Modem Circuit, Hart Modem	NCR20C12	NCR	
Modem Circuit, Analog Front End Receiver	TS68950	SGS-Thomson		Modem Circuit, CCITT V.21 (300 baud)	MC145442	Motorola		Modem Circuit, Low Power K212	SSI73K212L	SiliconSys (3687)	
	TS68951	SGS-Thomson		Modem Circuit, CCITT V.21 (300 bps)	STC9421C	S-MOS		Modem Circuit, Low Power K221	SSI73K221L	SiliconSys (3687)	
Modem Circuit, Analog Front End XMIT/RCVR, Clock Generator	TS68952	SGS-Thomson		Modem Circuit, CCITT V.22/V.21, 1200 bps	SSI73K222	SiliconSys (3687)	60	Modem Circuit, Low Power K222	SSI73K222L	SiliconSys (3687)	95
Modem Circuit, Analog-Digital Interface LSI (part of 4800 bps chip set)	YM3022	Yamaha		Modem Circuit, CCITT V.22 (1200/600 baud)	AV22	National		Modem Circuit, Low Power K224	SSI73K224L	SiliconSys (3687)	
Modem Circuit, Bell 103	SC11002	Sierra	25	Modem Circuit, CCITT V.22bis	XR2400	Exar		SSI73K324L	SiliconSys (3687)		
Modem Circuit, Bell 103 (-5 volt)	SC11003	Sierra		Modem Circuit, CCITT V.23 (1200 baud)	CD2223	Harris		Modem Circuit, Low Power (5 V with V.23 mode for European applications)	SSI73K322L	SiliconSys (3687)	
Modem Circuit, Bell 103 and 212A, CCITT V.21 and V.22, 300/1200 bps (with programmable gain)	SC11015	Sierra		Modem Circuit, CCITT (1200 baud)	MSM3953	OKI (3606)	65	Modem Circuit Minimum Shift Key (MSK) Modem	MX809	MX-COM	100
Modem Circuit, Bell 103, Bell 212A and CCITT V.21/V.22	SC11014	Sierra		Modem Circuit, CCITT (300 baud)	MSM6927	OKI (3606)		Modem Circuit, MNP Level 4 Error Correcting Module	CH1891	Cermetek	
Modem Circuit, Bell 103 with Power Down Mode (300 bps)	STC9424C	S-MOS		Modem Circuit, Controller for SC11004, SC11014 and SC11015 300/1200 bps modems	SC11017	Sierra		Modem Circuit, MNP5 Protocol, V.4.2bis, 2400 bps	SSI73D2247	SiliconSys (3687)	
Modem Circuit, Bell 103/113	CH1262	Cermetek	30	Modem Circuit, Controller for SC11006, 300/1200/2400 bps	SC11011	Sierra		Modem Circuit, Modem Control Processor (Bell 103, 212A, CCIT V.21/22)	MP8104A	MicroPwr	
	CH1267	Cermetek		Modem Circuit, Controller for SC11016 300/1200 bps modem	SC11027	Sierra	70	Modem Circuit, MSK (1200 baud for cordless phones)	MB86460	Fujitsu	
	CH1280	Cermetek			SC11028	Sierra					
	MT3530	Mitel			SC11037	Sierra					
	MM74HC942	National									
Modem Circuit, Bell 103/113/108, Bell 202 and CCITT V.21/V.23	AM7911	AMD	35								
Modem Circuit, Bell 103/212A	SSI73K212	SiliconSys (3687)									
Modem Circuit, Bell 103/212A and CCITT V.21, V.22 and V.22 bis	SC11006	Sierra									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Modem Circuit, Power Line and Twisted Pair NE5050		Signetics		Modem Circuit, 300/1200 bps Full Duplex (Bell 212A/103/113)	MP212A	MicroPwr		Multiplex/Demultiplex Circuit (AMI/B8ZS coded) TXC-03301		TranSwitch	
Modem Circuit, PSK Modulator/Demodulator, Bell 201/212A, CCITT V.22/V.26								Multiplexer, 3-to-1 (three STS-1 serial signals into one STS-3 parallel signal)		TranSwitch	
XR2123	Exar			Modem Circuit, 9600 bps Half-Duplex FAX Modem	TC35108	Toshiba	30		TXC-02201		
XR2123A	Exar			Modem Circuits, MSK Modem	MX439	MX-COM		Musical Instrument Digital Interface Communication and Service Controller.	YM3802	Yamaha	
Modem Circuit, Signal Processing LSI (part of 4800bps chip set)	YM3405	Yamaha		Modem Circuits, 1200 Baud Minimum Shift Key (MSK) Modem	MX419/519	MX-COM		NT1 Network Termination Transceiver		Level One	70
Modem Circuit, Twisted Pair Modem (implements Manchester or level encoding)	MC68185	Motorola	5	Modem Circuits, 1200 Baud MSK Modem For Trunked Radio	MX429	MX-COM		Optical Modem Circuit	CS8123	Crystal	
Modem Circuit (UART, 16C450 compatible)	SSI73M1450	SiliconSys		Modem Controller	CD22MOC6805	Harris		CS8124	Crystal		
	SSI73M2450	SiliconSys	(3688)	Modem Controller, 2400 bps (uses Hayes-compatible commands)	CD22MOC6805E	Harris	35	PBX Switch Set (performs break and access switch functions between PBX line feed and the telephone loop)	LH1208A	AT&T	
			(3688)	Modem (external DAA required) Circuit, Group III FAX, 2400 bps Data Modem	XE9624FD-E	XECOM		PCM Codec/Filter			
Modem Circuit (up to 1200 baud)	SSI73K302L	SiliconSys	(3687)	Modem Filter, Bell 103 (300 baud)	RM5630A	EG&G-Reticon		μPD9513AD	NEC		75
Modem Circuit (up to 1200 baud, V.23/V.21 modes)	SSI73K321L	SiliconSys	(3687)	Modem Filter, Bell 212A/CCITT V.22				μPD9514AD	NEC		
Modem Circuit, V.22bis, Provides the DSP Portion of the system, such as A/D, D/A (part of XR-2401/02 chip set)	XR2402C	Exar	10	XR2126	Exar			μPD9516AD	NEC		
Modem Circuit, V.22bis, 2400, 1200, 200 bps (part of XR-2401/02 chip set)	XR2401C	Exar		S35212	Gould AMI		40	μPD9602AD	NEC		
Modem Circuit (300 bps)	STC9420C	S-MOS		S35212A	Gould AMI			μPD9604AD	NEC		
Modem Circuit, 1200 bps	STC9120C	S-MOS		MT35212A	Mitel			μPD9622L	NEC		80
Modem Circuit, 1200 bps Modem Module	CH1775	Cermetek		SC11000	Sierra			μPD9624L	NEC		
Modem Circuit, 1200/600/300 bps, Bell 212/103, CCITT V.22/V.21 with Integral 16C450 UART.	SSI73K222U	SiliconSys	(3687)	SC11001	Sierra						
Modem Circuit, 2400 bps Full Duplex Modem Data Pump (CCITT V.22 bis, V.22 A/B, V.21, Bell 212A and Bell 103)	RC2424DP/1	Rockwell	15	SC11005	Sierra			PCM CODEC/Filter for ISDN and Digital Phone Applications, Programmable	TP3075A	National	
Modem Circuit, 2400 bps Modem Module	CH1780	Cermetek		Modem Filter, Bell 212A/CCITT V.22				TP3076A	National		
Modem Circuit, 2400 bps Modem Module, V.22 bis, V.21, Bell 212A and Bell 103	CH1782	Cermetek		XR2127	Exar			TP3070	National		85
Modem Circuit, 2400 bps Modem Module with International Telephone Interface	CH1784	Cermetek		XR2128	Exar			TP3070-X	National		
Modem Circuit, 9600 bps Half Duplex Modem (with error detection and DTMF reception)	R96DFX	Rockwell	20	Modem Filter, CCITT V.21, V.23, V.26	XR1001	Exar		TP3070A	National		
Modem Circuit, 9600 bps Modem Module, V.32/V.22 bis/V.21/Bell 212A/Bell 103	CH1790	Cermetek		Modem Filter Combination, V.27/Bell 208, Delay Equalizer, V.23/Bell 202 and 3 kHz Lowpass	RM5637A	EG&G-Reticon		TP3070A-X	National		
Modem Circuit (1200 baud for AT)	SSI73D2180	SiliconSys	(3687)	Modem Filter Combination, V.29/Bell 209, Delay Equalizer, and 3 kHz Lowpass	RM5638A	EG&G-Reticon	50	TP3071	National		
Modem Circuit (2400 baud for AT)	SSI73D2240	SiliconSys	(3687)	Modem Filter, FSK Bell 103	XR2103	Exar		TP3071-X	National		
SSI73D2407	SiliconSys	(3687)		XR2103A	Exar			TP3071A	National		90
SSI73D2417	SiliconSys	(3687)		Modem Filter, PSK Bell 212A	XR2120	Exar		TP3071A-X	National		
SSI73D2420	SiliconSys	(3687)		Modem Filter with Equalizer, 212A/V.22	SSI73M3522	SiliconSys		PCM Codec/Filter	MC145554	Motorola	
Modem Circuit, 2400 bps Modem	SC11024	Sierra		Modem Filter (300 baud)	RM5631A	EG&G-Reticon	55	MC145557	Motorola		
Modem Circuit, 2400/1200/300 bps Component Modem with MNP Error Correcting Protocol Through Class 5 (module)	XE2400MNP	XECOM		Modem Filter (2400 baud), V.22 b/s	RM5635A	EG&G-Reticon		MC145564	Motorola		
				Modem, FSK Modulator	XR2206	Exar		MC145567	Motorola		
				XR2206	Exar			PCM Conference Call and Attenuation/Noise Suppression Circuit	M116F1	SGS-Thomson	95
				Modem Interface and Receiver Filter Circuit (300 baud modem)	CH1230	Cermetek		PCM Conference Chip	MC145611	Motorola	
				Modem Module, 1200 bps	CH1776	Cermetek		PCM Elastic Store	MJ1474	GEC Plessey	
				Modem Module, 2400 bps	CH1785	Cermetek		PCM Interface Controller (controls up to 32 ISDN or 64 voice subscribers)	AM2055	AMD	
				Modem Receiver, FSK (IEEE 802.4)	NE5081	Signetics		PCM Interface Controller, Extended	PEB2056	Siemens	
				Modem System, FSK	XR14412V	Exar		PCM Interface Controller, Extended (linecard controller for ISDN applications)	PEB2055	Siemens	100
				Modem Transmitter, FSK (IEEE 802.4)	NE5080	Signetics		PCM Interface Controller (linecard controller for analog loop applications)	PEB2052	Siemens	
				Modern Analog Front End	SSI73M235	SiliconSys		PCM Line Interface	CS61535	Crystal	
				Multi-Rate Clock Adapter	LXP610	Level One	65	CS6159	Crystal		
								PCM Line Interface (1.544 or 2.048 MHz data rate)	CS61534	Crystal	
								PCM Line Interface (2048 kbps)	SSI78P234	SiliconSys	(3688) 105
								PCM Line Receiver and Clock Recovery Circuit	LIU01	AD	
								XRT5650	Exar		
								XRT5750	Exar		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
PCM Line Repeater, T1, T148C and 2 Mb/s (two-chip set)	XRT5600	Exar	5	Relay Driver (for 48 V telephone relays)	UDN2585A	Allegro Micro	50	Serial Interface Adapter for ETHERNET	MK68592	SGS-Thomson	90
	XRT5620	Exar			UDN2588A	Allegro Micro			MK7992	SGS-Thomson	
	XRT5720	Exar			UDN2957A	Allegro Micro		Serial Packet Controller	SSI73M650	SiliconSys (3688)	
					LS1014A	AT&T					
PCM Line Repeater, T1, 1.544 Mb/s	CD22301	Harris	PBD3510		Ericsson	Serial Receiver (changes T1-D2 or T1-D3 input to parallel output)		R8060	Rockwell		
	CD22641	Harris	PBD3511		Ericsson						
PCM Receiver	MJ1472	GEC Plessey	PBD3513		Ericsson	Serial Time Division Multiplexed (TDM) Voice/Data interface		CHI	AT&T		
	MJ1473	GEC Plessey	PBD3515		Ericsson						
PCM Repeater	RPT82	AD	PBD3520		Ericsson	Serial Transmitter (generates 193-Bit data stream in T1-D2 or T1-D3 format)		R8050	Rockwell		
	RPT83	AD	DS1687		† National						
	RPT85	AD	DS3686	National	Shift Register, Dual 1008 Bit	MA802	GEC Plessey				
	RPT87	AD	DS3687	National							
	XRC240	Exar	Relay Driver (for 48 V telephone relays) See also Interface, Memory and Peripheral Drivers	UDN2580A	Allegro Micro	Signal Processing Codec Filter (two PEB2060s)	PEB2260	◊ Siemens			
	XRC262	Exar									
	XRC277	Exar				Slave Digital-Loop Transceiver, 80 kb/s	MC145426	Motorola			
	TEL5221	STC									
PCM Repeater (for E1 carrier systems)	LXT313	Level One	Relay Driver, Quad Negative Voltage	DS3680	National	Slave Digital-Loop Transceiver, 160 kb/s	MC145425	Motorola			
	LXT316	Level One									
PCM Repeater (for T1 carrier systems)	LXT312	Level One	Relays, High Voltage, Optically Coupled	LH1085A	AT&T	SLIC Battery Feed	LB1276AF	AT&T			
	LXT315	Level One									
PCM Repeater/Receiver	XRT56L22	Exar		Reverse Line Interface Circuit	AMS2044	Aptek	Solid State Relay (for telephone switchhook), 1 Form A	LH1056AT1	AT&T		
PCM Repeater, Two-Chip Set (TIC)	XRC587	Exar			Reverse Line Interface Circuit (performs 2-wire to 4-wire conversion while emulating telephone instrument electrical functions when co-located with switching system.)	AMS2039	Aptek	Solid State Relay, Form B (1500 Vrms isolation)	LH1298A	AT&T	
	XRC588	Exar				AMS2040	Aptek				
PCM Repeaters	RPT86	AD		AMS2041		Aptek	Solid State Relay, Form B (3750 Vrms isolation)	LH1298AT	AT&T		
				AMS2042		Aptek					
PCM Signal Monitor	SP1450B	GEC Plessey		Ring Detector	TCM1506B	TI	Solid State Relay, Form B (AT&T)	LH1298AAB1	AT&T		
	SP1455B	GEC Plessey			TCM1512B	TI					
PCM Transceiver	XRT5681	Exar	Ring Detector (operates from 14 to 66 Hz)	ZN480E	GEC Plessey	Solid State Relay, 1 Form A (SPST)	LH1056A	AT&T			
	TEL5220	STC		ZN480J	† GEC Plessey						
PCM Transceiver, Low Power	TEL5219L	STC	Ring Detector (operates from 16 to 68 Hz)	LB1006A	AT&T	Solid-State Relay, Form C Monolithic (for telecom switching)	LH1296A	AT&T			
	TEL5220L	STC									
PCM Transceiver, T1	XRT5684	Exar	Ring Driver	TCM1501B	TI	SONET Overhead Terminator-1 (SOT-1)	TXC-03001	TranSwitch			
	XRT5690	Exar									
PCM Transceiver (8Mbit)	XRT5683	Exar	S Bus Interface Transceiver (for S and Q Bit messages)	PEB2081	◊ Siemens	Speakerphone Circuit	CS262	Cherry Semi			
								CS272	Cherry Semi		
PCM Transcoder	HC5560	Harris	S/T Interface Transceiver (for ISDN)	MC145474	Motorola	PBL3786/2	Ericsson				
				MC145475	Motorola		PBL3830	Ericsson			
PCM 8-bit Format Converter	MJ1410	GEC Plessey	S-Bus interface Circuit (implements 4-wire S/T interface used to link voice/data terminals to an ISDN)	AM2080	AMD	PBM3910	Ericsson				
				AM2080B	AMD		PBM3911	Ericsson			
Piezoelectric SAW Band Pass Filters	F5CB	Fujitsu	SASSD Circuit with SL1 Codec Interface	MA857	GEC Plessey	XRT6420-2	Exar				
							XRT6425	Exar			
Primary Access Framer/Controller	T7230	AT&T	Secure Serial Communications Card for PC XT/AT with Sync/Asyn Communications, Resident Processor, Secure Bus, DES and DE Encryptions protocols.	NM830SSC	Newbridge	IR3N81A	Sharp				
Private Squelch CTCSS Encoder/Decoder	MX375	MX-COM	Selective Call Codec	MX203	MX-COM	Speakerphone Circuit, Voice Switched	MC34018	Motorola			
							MC34118	Motorola			
Pseudo-Random Noise Code Generator	STEL1032	STEL (3703)	Sequential Tone Encoder	MX503	MX-COM	Speakerphone Circuit (volume pre-set)	IR3N84	Sharp			
Pulse Dialer	UM9151-3	UMC	Sequential Tone Transponder	MX403	MX-COM	Speakerphone Circuit (with speech network)	IR3N83	Sharp			
R-Interface Module (RIM), Implements the Rate Adaption Function within a Terminal Adaptor.	MH89500	Exar	Serial Communications Controller, Enhanced (two independent full-duplex channels)	Z85C30	AMD	Speakerphone (two-chip set)	XRT6420	Exar			
	MH89500	Mitel					XRT6421	Exar			
RC Encoder, Programmable 7-Channel	NE5044	Signetics	Serial Communications Controller, Extended (single channel)	SAB82526	◊ Siemens	Speech Circuit for Electronic Telephones	U4056B	AEG Corp			
							U4056B1	AEG Corp			
Read Channel Filter	IMP42R53	IMP	Serial Communications Controller, Extended (with DMA)	SAB82525	◊ Siemens	U454B	AEG Corp				
							PBL3726-X	Ericsson			
Receive Filter for 14-Bit ADC (programmable gain)	AD7371	AD (3355)	Serial Communications Controller, High-Level (HSCX)	AM82525	AMD	PBL3781	Ericsson				
							XRT5995	Exar			
Receiver, DTMF	MT8870CE	Mitel	Serial Communications Controller (two independent HDLC channels)	SAB82520	Siemens	GL6901	GoldStar				
	MT8870CE-1	Mitel					MC34014	Motorola			
						TP5700	National				
							TP5700A	National			
						LS356	SGS-Thomson				
							LS656	SGS-Thomson			
						IR3N31	Sharp				

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line	
Speech Circuit for Electronic Telephones (Cont'd)				Subscriber Line Interface Circuit				Subscriber Pulse Metering Detector				
TEA1060	Signetics		5	AM79534	AMD		40	MX611	MX-COM		95	
TEA1061	Signetics			AM79535	AMD			Subscriber Pulse Metering Detector, Low Power				
TEA1067	Signetics			AM79573	AMD			MX621	MX-COM			
TEL3106	STC			MA79532	AMD			Supernet Chipset for the Fiber Distributed Data Interface (RAM buffer controller)				
TEL3107	STC			AMS2002	Aptek			AM79C81	AMD			
Speech Circuit, for Telephone Set				AMS2006	Aptek		45	AM79C82	AMD			
MB4514	Fujitsu		AMS3081	Aptek		AM79C83		AMD				
Speech Circuit, for Telephone Set (control and supervise all vocal interface requirements)				AMS3082	Aptek			AM7984A	AMD			
MB4514B	Fujitsu		HC5502A	Harris		AM7985A		AMD				
MB4514C	Fujitsu		HC5502B	Harris		Switch, Bilateral (for remote subscriber line test unit)						
Speech Circuit, Telephone Speech Network (with dialer interface)				HC5504	Harris		50	LB1060A	AT&T			
MC34114	Motorola		HC5504B	Harris		Switched Capacitor Active Filter System, Mask Programmable						
Speech Circuit (very low drop)				HC5509B	Harris			LMF120	National			
L3280	SGS-Thomson		MH88500	Mitel		55		Switched Capacitor Butterworth Low-Pass Filter, 4th Order				
Speech Circuit, Voice Scrambler (for communication transmitter and receiver)				MC3419C	Motorola				MF4	National		
LC8931	Sanyo		μPD7063L	NEC			Switched Capacitor Filter (low-pass elliptical type)					
Speech Circuit With Power Management				μPD7151L	NEC			RF6609ANC-015	EG&G-Reticon			
TEA7063	SGS-Thomson		μPD7161L	NEC			60	Switched Capacitor Filter (1010 Hz notch/program weighting)				
Speech Circuit (2-wire to 4-wire)				TDB7711	SGS-Thomson			RF6651ANP	EG&G-Reticon			
LS285	SGS-Thomson		TDB7722	SGS-Thomson		Switched 56 Transceiver (56 Kbps)						
Speech Network and Tone Dialer				TCM4205A	TI			LXT456	Level One			
MC34013	Motorola		Subscriber Line Interface Circuit (DAA)					Switched-Capacitor Active Filter System (mask-programmable)				
Speech Network (for ECM receiver)				TEA7868	SGS-Thomson		65	LMF121	National			
IR3N82	Sharp		Subscriber Line Interface Circuit, Digital Adaptor (a TCM ISDN compatible, two wire, short loop transceiver)					Switched-Capacitor Butterworth Low-Pass Filter, 4th Order				
Speech Network for Telephone				TP3401	National			LMF40	National			
IR3N38	Sharp		Subscriber Line Interface Circuit, Metering					Switched-Capacitor Butterworth Low-Pass Filter, 6th Order				
Speech Network, Low Voltage				AM79M531	AMD			LMF60	National			
GL6965	GoldStar		15	AM79M534	AMD		Synchronous Protocol Data Formatter (HDLC/DMA controller, 32-channel)					
GL6981	GoldStar			AM79M535	AMD		70	T7115A	AT&T			
Speech Network (provides 2- to 4-wire interface between a telephone loop and a handset)					AM79M571	AMD			TS7538	SGS-Thomson		
LB1071A	AT&T			Subscriber Line Interface Circuit (performs 2-wire to 4-wire conversion)				TCM Integrated Long Haul Transceiver				
Speech Network (transmitter/receiver amplifier, side tone control)					TCM4204A	TI			LXT131	Level One		
KA2412A	Samsung		TCM4207A	TI		TCM Integrated Transceiver						
Speech Network with Dialer Interface (Transmitter/receiver and side tone gain)				Subscriber Line Interface Circuit Protector (lightning and power surges)				75	LXT130	Level One		
KA2425A	Samsung		20	LB1201A	AT&T		TCM Integrated Quad Transceiver					
KA2425B	Samsung			LB1221A	AT&T		LXT134		Level One			
Speech Processor, Provides Restoration for Variable-Speed Playback					Subscriber Line Interface Circuit (SLIC)				LXT135	Level One		
DSPG7001	DSP Group			PBL3736	Ericsson		Telephone Amplifier/Tone Ringer (speech amplifier, noise rejection filter)					
DSPG7002	DSP Group			PBL3762	Ericsson		80	MB4513	Fujitsu			
Speech Recognition System, Speaker Dependent				PBL3764	Ericsson	Telephone IC						
TC8861	Toshiba		PBL3765	Ericsson		MB4509		Fujitsu				
TC8862	Toshiba		PBL3766	Ericsson		Telephone Interface Circuit						
TMP80C50AU	Toshiba		PBL3767	Ericsson		LH1028B		AT&T				
StarLAN Coded Data Transceiver				PBL3796	Ericsson	85	Telephone Line Interface Circuit					
AM7961	AMD		PBL3798	Ericsson			CH1812	Cermetek				
StarLAN, Ethernet/Cheapernet LAN Controller				PBL3799	Ericsson		CH1815	Cermetek				
MK5032	SGS-Thomson		MC3419-1L	Motorola			Telephone Line Interface Circuit (with correct detection)					
StarLAN Hub (10-port stand-alone)				Subscriber Line Interface Circuit with Magnetic Compensation				CH1813	Cermetek			
WDLAN-H10	Western		30	TP3200	National		Telephone Line Interface, International DAA Circuit					
StarLAN Station (compatible with MK5032)					TP3204	National		CH1814	Cermetek			
MK50351	SGS-Thomson			Subscriber Line Interface Circuit (24 V)				90	Telephone, Low Power FM IF Amplifier			
Sub-Audio Signaling Processor					AMS2406	Aptek			IR3N06	Sharp		
MX805	MX-COM			AMS2408	Aptek		Telephone Power Supply Circuit					
Subscriber Line Interface Circuit				Subscriber Line Interface Circuit (2-wire to 4-wire conversion)					TEA1081	Signetics		
AM79531	AMD		MH88610	Mitel		Telephone Ringer Circuit (with multiple programmable tones)						
AM79574	AMD		Subscriber Line Interface Circuit—24V				Telephone Tone Ringer (4 different ring tones)					
Subscriber Line Interface Circuit, Metering				HC5524	Harris		Telephone Transmission Circuit (dialer interface, and transmit level dynamic limiting)					
AM79M574	AMD		35	Subscriber Line Interface Module				TEA1064	Signetics			
Subscriber Line Interface Circuit					TP3210	National		Telephone, One-Chip Microcomputer				
AM79571	AMD			TP3211	National		LR4820	Sharp				
Subscriber Line Audio Processing Circuit (SLAC)					Subscriber Line Interface Circuit, Metering							
AM7905A	AMD			AM79M57	AMD							
Subscriber Line Audio-Processing Circuit, Dual (DSLAC)				Subscriber Loop Interface Circuit								
AM79C02	AMD		40	MC33120	Motorola							
Subscriber Line Audio-Processing Circuit, Dual (DSLAC)					Subscriber Network Interface Circuit							
AM79C02	AMD			IMP8930	IMP							
Subscriber Line Audio-Processing Circuit, Dual (DSLAC)					Subscriber Network Interface Circuit (CCITT 1.430 and T Interface Compatible)							
AM79C02	AMD			MT8930	Mitel							

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Teletset Audio Interface (CPU to audio control)	MC145429	Motorola		Tone Generator (DTMF)		(Cont'd)		Tone Receiver, MFR2 Forward Tone Receiver (hybrid)	AMS3104	Aptek	
Teletext, Color Video Display Generator (NAPLPS protocol)	R6549	Rockwell		S25089	Gould AMI			Tone Receiver, 12 kHz	AMS3050	Aptek	
Ti Interface Controller (between DSI and PCM digital voice and data system equipment)	RT9170	Rockwell		S2559F	◊ Gould AMI			Tone Receiver, 16 kHz	AMS3051	Aptek	
Ti interface to VMEbus at T1 rates (1.544 Mb/s)	VME71-105	Newbridge		CD22859	Harris		50	Tone Receiver, DTMF	MT8880	◊ Mitel	
		(3593)		ICM7206A	Harris			Tone Ringer	ZN488E	GEC Plessey	110
Time Division Switch, 1024-Channel CMOS (crosspoint switch for PBX systems)	μPD43501	NEC	(3591)	ICM7206B	Harris		55		GL6840A	GoldStar	
Time Slot Access Circuit	MJ1446	GEC Plessey		ICM7206C	Harris				ML8204	SGS-Thomson	
Time Slot Assigner Circuit	MA5981	GEC Plessey		ICM7206D	Harris				ML8205	SGS-Thomson	
Time Slot Interchange Circuit	MC145601	Motorola		TP5088	National		60		IR3N32/N	Sharp	115
Time Slot Interchanger	T7270	AT&T		TP5089	National				IR3N34/N	Sharp	
Time Slot Zero Receiver	MJ1445	GEC Plessey		μPC767	NEC			Tone Ringer Driver	TCM1531	Ti	
Time Slot Zero Transmitter	MJ1444	GEC Plessey		EF7189	SGS-Thomson				TCM1532	Ti	
Token Ring Jitter Attenuator (IEEE 802.5 network)	CS80600	Crystal		PCD3312	Signetics				TCM1536	Ti	
Tone Decoder	XR2567	Exar		STC5089	STC				TCM1539	Ti	
	XR2567M	† Exar		STC5089L	STC			Tone Ringer (operates from ring signal, drives piezoelectric element)			
	MV8860	GEC Plessey		TCM5087	Ti				LB1004A	AT&T	120
	MV8862	GEC Plessey		TCM5089	Ti				LB1005A	AT&T	
	MV8863	GEC Plessey							LB1005B	AT&T	
	MT8860	Mitel							LB1005C	AT&T	
	LMC567	National							MC34012	Motorola	125
	IR3N05/N	Sharp							MC34017	Motorola	
Tone Decoder, MF	SSI78A207	SiliconSys	(3688)	Tone Generator (multifrequency)	AMS3501	Aptek		Tone Ringer (operates from ring signal, drives speaker)	CS8204	Cherry Semi	
Tone Decoder (operates from 0.01 Hz to 500 kHz)				Tone/Pulse Dialer					CS8205	Cherry Semi	
	XR2211C	Exar			UM91210	UMC			XRT8205	Exar	
	XR2211M	† Exar			UM91214	UMC			MC34012-1	Motorola	130
	XR567AC	◊ Exar			UM91215	UMC			MC34012-2	Motorola	
	XR567AM	◊† Exar			UM91230C	UMC			MC34012-3	Motorola	
	LM567C	National			UM91311	UMC			M764	SGS-Thomson	
	XR2211C	Raytheon							TCM1520A	Ti	
	XR2211M	† Raytheon									
	NE567	Signetics									
	SE567	† Signetics									
Tone Decoder, PBX	MSM6920	OKI	(3606)								
Tone Decoder, Terminal	MSM6945	OKI	(3606)								
Tone Detector	MX105	MX-COM									
Tone Dialer	UM2559	UMC									
	UM95088	UMC									
	UM95089	UMC									
	UM9559E	UMC									
	UM9559E/F	UMC									
Tone Encoder/Decoder (for MIL-STD-141A and Fed Std 1045 protocols)	SRT141AED	SpaceResearch									
Tone Generator (DTMF)	S2559E	◊ Gould AMI									
Tone Generator	MX205	MX-COM									
Tone Generator (CCITT R1 tones)	M993	Telton									
Tone Generator (DTMF)	PBD3535	Ericsson									
	PBD3551	Ericsson									
	GL6801	GoldStar									
		(Continued)									

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Telecommunication Circuits (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
T1/CEPT PCM Jitter Attenuator	CS61600	Crystal		Viterbi Decoder (for forward error correction)	STI2010	STEL	
T1/CEPT PCM Line Interface	CS61574	Crystal		Viterbi Decoder, 2 Mbps	Q1650-1	◊ Qualcomm	40
	CS6158	Crystal		Viterbi Decoder, 10 Mbps	Q1650-2	◊ Qualcomm	
T1 CSU/ISDN Primary Rate Interface Transceiver	LXT310	Level One	5	Viterbi Decoder, 25 Mbps	Q1650-3	◊ Qualcomm	
	LXT311	Level One		Viterbi Decoder, 256 kbps	Q0256	◊ Qualcomm	
T1 ESF Framer/Formatter	LXP2180A	Level One		Voice Frequency Level Expander	LB1026A	AT&T	
T1/E1 Clock Adapter	LXP600A	Level One		Voice Recognition Circuit (voice analysis, recognition and system control)	T6658A	Toshiba	
	LXP602	Level One		Voice Recognition/Response Circuit	DSPG5006	DSP Group	45
	LXP604	Level One		Voice Recording/Playback Circuit, Uses Adaptive Delta Modulation	TC8830A	Toshiba	
T1/E1 Elastic Store (for level one primary rate interface)	LXP2175	Level One	10		TC8831	Toshiba	
T1/E1 Integrated Short Haul Transceiver	LXT301	Level One			TC8832	Toshiba	
T1/E1 Integrated Short Haul Transceiver (with receive jitter attenuation)	LXT300	Level One		Voice Transmission Privacy Circuit	DVS100	GEC Plessey	
	LXT304A	Level One		Single Analog Front End-VC-22B,V-22	TS7542	◊ SGS-Thomson	50
T1/E1 Integrated Short Haul Transceiver (with transmit jitter attenuation)	LXT305	Level One	15	Single Chip Transceiver Provides AES/EBU Ansi s4.40 interface for digital audio data	CA16C440	Newbridge (3593)	
	LXT305A	Level One		Dual Tone Generator (touchtone frequencies)	PCD3311	Signetics	
T1/E1 Integrated Quad Receiver	LXT324	Level One		Dual SPDT Wideband Video T Switch	DG542A	† Siliconix	55
T1/E1 Integrated Quad Receiver (with loss of signal detection circuit)	LXT325	Level One		Quad SPST Wideband Video T Switch	DG540A	† Siliconix	
T1 Interface to VMEbus at T1 Rates - Includes Resident Processor and Synchronous and TDM Bus.	VME1-115	Newbridge (3593)			DG541A	† Siliconix	
T1 Line Interface (line driver)	XRT5675	Exar		One Chip Telephone	PBL3780/2	Ericsson	
T1 Line Interface (1.544 MHz data rate)	CS61544	Crystal	20	10Base-T Hub Transceiver	LXT903	Level One	
T1 Network Interface Unit (for 1.544 Mbps T1 services)	DS2190	Dallas		G. 721 Transcoder	VP23010	VLSI Tech (3749)	
T1 Optical Interface	CS8125	Crystal		T1 Transceiver	VP14341	VLSI Tech (3747)	
	CS8126	Crystal		Triple Sonet STS Payload Processor	VP15323	VLSI Tech (3748)	
T1 Receive Buffer	LXP2176	Level One					
T1 Receiver Buffer	DS2176	◊ Dallas	25				
T1, Serial T1 Transceiver (193E,S)	DS2180	◊ Dallas					
U-Interface Transceiver	LXT500	Level One					
UART for Peripheral/Modem Control	KS5812	Samsung					
UNITS (User Network Interface for Switches)	T7252A	AT&T					
Universal Synthesizer (for cellular radio chipset)	UMA1010	Signetics (3665)	30				
V.35 Interface Transmitter/Receiver	XRT3588	Exar					
	XRT3589	Exar					
V-22B,V-22,V-21,V-23,BELL-103,212 Modem Chip Set	TC75C25	◊ SGS-Thomson					
V-32,V-22B,V-22,V-21,V-23,BELL-212,103 Modem Chip Set	TS75C32	◊ SGS-Thomson					
Videotext, Error Correction	MSM6254	OKI	35				
Viterbi Decoder (error correction device, 17 Mbp/s)	Q1401C	◊ Qualcomm					
	Q1401M	◊† Qualcomm					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Timers

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Clock Circuit, Serial I/O Calendar and Clock μPD4990	NEC			Timer (CMOS 555), Low Power	GLC555	GoldStar	55	Dual Precision Timers (micro-	SE556	(Cont'd)	
CMOS Timer (dual)	KS556	Samsung		ICM7555	◊ Harris			SE556C	Unitorde		95
CMOS Timer (high performance)	KS555H	Samsung		ICM7555M	◊† Harris				† Unitorde		
Digital Clock Timer	LR3419	Sharp		ICM7555	◊ Maxim			TLC556C	† Unitorde		
Event/Hour Meter, 5-1/2 Digit LCD Drive	ICM7249	Harris	5	KS555	Samsung			TLC556I	† Unitorde		
Internal Current Source	XR320	Exar		Timer (CMOS 555), 1V, 2 MHz, Micropower	ALD555-1	◊† AdvLinear	60	TLC556M	† Unitorde		
Long Period Timer (500 ms to 100 hrs.)	MB4214	Fujitsu		Timer (CMOS 555), 2 MHz, Micropower	ALD555	◊† AdvLinear		Quad, CMOS, 2 MHz, Microp	ALD4501	Unitorde	100
Low Power Precision Timer	HI-7555	† Holt		Timer, CMOS, 1V, 2.5 MHz, Micropower	ALD1504	◊† AdvLinear		Quad, CMOS, 1V, 2 MHz, †	ALD4503	Unitorde	
Low Voltage CR Timer	TC9160	Toshiba		Timer/Counter Timer (0.1 second to 50 hours)	M51849	Mitsubishi		Quad, Current Sink Output	XR558C	Unitorde	105
Micropower, Long Range (microseconds to days)	XR2243	Exar	10	Timer, LinCMOS	TLC555C	◊ TI		XR558M	Unitorde		
Precision	LM122	† National		TLC555I	◊ TI		65	NE558C	Unitorde		
LM2905	National			TLC555M	◊ TI			NE558	Unitorde		
LM322	National			Timer, LinCMOS, High Speed, Low Power	TLC551C	TI		SA558	Unitorde		110
LM3905	National			Timer, LinCMOS, 1-Volt Operation	TLC552C	TI		SE558	Unitorde		
Precision, Long Term (3 seconds to 1 week)	MW107	AnalogSys	15	Timer, Long Range	BU2300A	ROHM		Quad, Current Source r for A/D Converter (ASCII	XR55	Cybernetic	
MW197	AnalogSys			Timer (pulse width from μs to hours for output)	BA222	ROHM	70	XR55†	Register (125 MHz data rate)		
Programmable (includes a counter for long time delays)	XR2240C	Exar		Timer (TTL compatible)	LMC555	National		agister	020-125	Siemens	
Binary Control	XR2240M	† Exar		LM555	National			20	system (ADC, DAC, bandgap		
ICM7242	Harris		20	Timer with +12 Counter (time constant 7200 RC)	ZN1034E	GEC Plessey		Register (125 MHz data rate)	669	AD (3316, 3320, 3350)	
LS7210	LSI Comp (3563)			Timer with Counter, (time constant 128 RC)	XR2242C	Exar	75	020-125	AD (3316, 3320, 3350)		
ICM7240	◊ Maxim			XR2242M	† Exar			system (ADC, DAC, bandgap			
ICM7242	◊ Maxim			Dual, CMOS, 2.5 MHz, Micropower	ALD2502	◊† AdvLinear	80	669	AD (3316, 3320, 3350)		
ICM7250	◊ Maxim			Dual (CMOS 556) Low Power	GLC556	GoldStar		AD (3316, 3320, 3350)			
ICM7260	◊ Maxim			ICM7556	Harris			AD (3316, 3320, 3350)			
MC14541BC	Motorola		25	ICM7556M	† Harris			AD (3316, 3320, 3350)			
μA2240C	TI			ICM7556	◊ Maxim			AD (3316, 3320, 3350)			
Programmable Timer	ZN1036D	GEC Plessey		Dual, CMOS, 1V, 2 MHz, Micropower	ALD2504	◊† AdvLinear	30	AD (3316, 3320, 3350)			
ZN1036E	GEC Plessey			Dual (dual 555)	XRL556C	Exar		AD (3316, 3320, 3350)			
LR3472	Sharp			XRL556M	† Exar			AD (3316, 3320, 3350)			
Programmable Timer (for 50 Hz line freq.)	SAE0530	Siemens		XR556C	◊ Exar			AD (3316, 3320, 3350)			
Programmable Timer (for 60 Hz line freq.)	SAE0531	Siemens		XR556M	◊† Exar			AD (3316, 3320, 3350)			
Time Base Generator	SSI32D4661	SiliconSys (3686)		MC3456	Motorola		0	AD (3316, 3320, 3350)			
Timer	XRL555	◊ Exar		μA556C	National			AD (3316, 3320, 3350)			
XR555C	◊ Exar		35	LM556	† National			AD (3316, 3320, 3350)			
XR555M	◊† Exar			LM556C	National			AD (3316, 3320, 3350)			
CA555	† Harris			NE556C	Samsung			AD (3316, 3320, 3350)			
CA555C	Harris			LM556	SGS-Thomson			AD (3316, 3320, 3350)			
NE555	Harris			NE556	Signetics		5	AD (3316, 3320, 3350)			
MC1455	Motorola			NE556-1	Signetics			AD (3316, 3320, 3350)			
LM555C	National		40	SA556	Signetics			AD (3316, 3320, 3350)			
NJM555	NJR			SA556-1	Signetics			AD (3316, 3320, 3350)			
LM555C	Samsung			SE556	† Signetics			AD (3316, 3320, 3350)			
LM555	SGS-Thomson			SE556-1	† Signetics		30	AD (3316, 3320, 3350)			
NE555	Signetics			SE556-1C	† Signetics			AD (3316, 3320, 3350)			
SE555	† Signetics		45	NE556	TI			AD (3316, 3320, 3350)			
SE555C	† Signetics			SA556	TI			AD (3316, 3320, 3350)			
355A/C	TeledyneC			Dual (dual 555), Pinout Variations	XR2556C	Exar	35	AD (3316, 3320, 3350)			
355B/M	† TeledyneC			XR2556M	† Exar			AD (3316, 3320, 3350)			
NE555	TI			Dual (dual 555)	NJM556	NJR		AD (3316, 3320, 3350)			
SA555	† TI		50	Dual Monostable Multivibrator	BA225F	ROHM	90	AD (3316, 3320, 3350)			
SE555	† TI			BA226AF	ROHM			AD (3316, 3320, 3350)			
TA7326	Toshiba			BA226F	ROHM			AD (3316, 3320, 3350)			
TA7327	Toshiba							AD (3316, 3320, 3350)			
Timer, CMOS, 2.5 MHz, Micropower	ALD1502	◊† AdvLinear						AD (3316, 3320, 3350)			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behav)

Bold face indicates additional data is provided on the p

lental Model Available
age noted.

◊ Available in Surface Mount Package

MASTER SELECTION GUIDE

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Data Acquisition System, 8 Channel (expandable), Sample/Hold, 8-Bit Conversion	MN7120 MN7120H	MicroNet ↑ MicroNet		Data Acquisition System, 16 Channel or 8 Channel Differential, 12-Bit A/D	AD362K AD362S AD369K AD369S	AD ↑ AD AD (3321) ↑ AD (3321)		Digital-to-Resolver Converter	DRC1745 DRC1746	AD AD	(3327) (3327)
Data Acquisition System, 8 Channel, Sample/Hold, 12-Bit A/D	MN7140 MN7140H	MicroNet ↑ MicroNet		SDM854 SDM856 SDM857 HS362	Burr-Brown Burr-Brown Burr-Brown Sipex-HSD		60	Digital-to-Resolver Converter (with auto-nulling option)	AD2565 AD2566	AD AD	(3327) (3327)
Data Acquisition System (8 channel, 16-bit with mux, ref, clock and tri-state outputs)	SP9480	Sipex-HSD	5	Data Acquisition System, 16 Channel, Sample/Hold, 12-Bit Conversion	HDAS16MC HDAS16MM	Date! (3441) ↑ Date! (3441)	65	Direct Frequency Synthesizer, Up-to 400 MHz (square, triangular, or sine wave output)	SP2002	GEC Plessey	100
Data Acquisition System, 8 Channel, 8-Bit Conversion, Microprocessor Compatible	AD7581A AD7581B AD7581C AD7581J AD7581K AD7581L ZN437E ZN437J	◊ AD (3322, 3325) ◊ AD (3322, 3325) ◊ AD (3322, 3325) ◊ AD (3322, 3325) ◊ AD (3322, 3325) ◊ AD (3322, 3325) GEC Plessey ↑ GEC Plessey		Data Acquisition System, 16 Channel 8-Bit Conversion	ADC0816C ADC0817C	National ↑ National		Divider (See also Multipliers/Dividers below.)	AD535J AD535K DIV100	AD AD Burr-Brown	(3346) (3346) (3416)
	MP7581A MP7581B MP7581C MP7581J MP7581K MP7581L MP7581S MP7581T MP7581U ADC0808 ADC0809 SI8602	MicroPwr MicroPwr MicroPwr MicroPwr MicroPwr MicroPwr ↑ MicroPwr ↑ MicroPwr ↑ MicroPwr ◊ National ◊ National Siliconix	10 15 20 25	Data Acquisition System, 16 Element or 8 Channel Differential, Sample/Hold, 12-Bit Conversion	DAS5712 DAS5714 DAS5716	Adv Analog Adv Analog Adv Analog	70	Driver, Switch Driver, for Power Transistors	SG3629	◊ SiliconG	
				Data Acquisition System (16 single-ended channels, 12-bit resolution)	SDM862 SDM872	Burr-Brown Burr-Brown		Driver, Dual High Current MOSFET Compatible Output Driver	UC1706 UC3706	↑ Unitorde Unitorde	105
Data Acquisition System (8 differential channels, 12-bit resolution)	SDM863 SDM873	Burr-Brown Burr-Brown		Data Acquisition System, 18-Bit Floating Point, Sampling Rate up to 100 kHz	AD1330	AD		Driver, Dual, High-Current MOSFET Output	UC1707 UC3707	↑ Unitorde Unitorde	
Data Acquisition System, 8-Channel, 12-Bit A/D Converter with Reference, Clock, Three-State Outputs, Microprocessor Interface	HS9410J HS9410K HS9410S/B HS9410T	Sipex-HSD Sipex-HSD ↑ Sipex-HSD ↑ Sipex-HSD	30	Data Acquisition System (12-bit ADC with on-chip reference, 8/12-bit serial port)	AD79015	AD (3357)	75	Driver, Four Channel	LAS8091P	SemTech	
Data Acquisition System, 10-Bit	LTC1090AC LTC1090AM	LinearTech ↑ LinearTech		Data Acquisition System, 16 Channel (12-bit resolution)	MN7150-16	MicroNet		Earth Leakage Detector (for use in earth circuit interrupters)	KA2807	Samsung	110
Data Acquisition System, 10-Bit Serial (2-channel)	LTC1091AC LTC1091AM	LinearTech ↑ LinearTech	35	Data Acquisition System, 4 Channel Differential (12-Bit, 250 KHz)	HDAS534M HDAS534MC	Date! (3441) Date! (3441)	80	Electro-Optic Sensor System (amplifier detects modulated signals, pulse or analog output)	MU110	AnalogSys	
Data Acquisition System, 10-Bit Serial (6-channel)	LTC1093AC LTC1093AM LTC1093C	LinearTech ↑ LinearTech LinearTech		Data Acquisition System, 8 Channel Single-Ended (12-Bit, 250 KHz)	HDAS538M HDAS538MC	Date! (3441) Date! (3441)		Electronic Switching Circuit (for ignition applications)	CA3165	Harris	
Data Acquisition System, 10-Bit with Reference	LTC1095BC LTC1095BM LTC1095CC LTC1095CM	LinearTech ↑ LinearTech LinearTech ↑ LinearTech	40	DC-to-DC Converter Control Circuit	MC33063A	Motorola		EMI Filter (4 A input current)	AFC461	Adv Analog	
Data Acquisition System, 12 Bit	MN7150	MicroNet		Deglitcher Circuit	4903	TeledyneC		Equalizer	ML202	MicroLinear	
Data Acquisition System, 12-Bit A/D Converter (0.024 % FSR), 16 Single-Ended Inputs, and S/H Amplifier	SDM862A SDM862B SDM862J SDM862K SDM862R SDM862S SDM863A SDM863B SDM863J SDM863K SDM863R SDM863S	Burr-Brown Burr-Brown Burr-Brown ◊ Burr-Brown ↑ Burr-Brown ↑ Burr-Brown Burr-Brown Burr-Brown Burr-Brown Burr-Brown ↑ Burr-Brown ↑ Burr-Brown	45 50 55	Deglitcher (suppresses transients at outputs of D/A)	4902 4902HR	TeledyneC TeledyneC	85	Fiber Optic LED Driver	SFD4001	STC	115
				Delay Line, Dual Channel	BT622	Brooktree (3404, 3406)		Fiber Optic Receiver Limiting Amplifier	SFA4011	STC	
				Delay Line, Quad Channel	BT624	Brooktree (3404, 3406)		Fiber Optic Receiver Transimpedance Amplifier	SFA4021	STC	
				Detector/Alarm System (with integral drivers for piezoelectric and mechanical horns)	CA3164A	Harris		Filter, Adaptive High-Pass (with independent gain block)	LS581	Gennum	
				DFT Processor (buried channel CCD)	RT5601B	EG&G-Reticon		Filter, Digitally Programmable Low Pass	MAX270C MAX270M MAX271C MAX271M	Maxim ↑ Maxim Maxim ↑ Maxim	120
				Differential Amplifier (unity gain)	INA117A INA117B	↑ Burr-Brown (3412) ↑ Burr-Brown (3412)	90	Filter, E ² Programmable Dual BiQuad	SC22322 SC22324	Sierra Sierra	
				Digital Gain Set, for setting gain of op-amps	LF13006 LF13007	National National		Filter, Low Pass, Seventh Order Elliptic	XR1015 XR1016	Exar Exar	125
				Digital to Resolver/Synchro Converter	DSC11520	ILC-DDC		Filter, MF-10 Type programmable	SC11122	Sierra	
				Digital to Synchro and Digital to Resolver Converter, 14-Bit	DSC644	ILC-DDC		Filter, Switched Capacitor (general purpose)	RF5615A RF6609A	EG&G-Reticon EG&G-Reticon	
				Digital to Synchro Converter, 14-Bit	DSC544	ILC-DDC	95	Filter, Switched Capacitor (notch filter)	RF6651A	EG&G-Reticon	130
								Filter, Switched Capacitor (universal)	MF10	National	
								Filter, Switched Capacitor (1/3 octave bandpass)	RM5604A	EG&G-Reticon	
								Filter, Switched Capacitor (5th order highpass)	RF5611A	EG&G-Reticon	
								Filter, Switched Capacitor (6th order bandpass)	RF5614A RF5616A	EG&G-Reticon EG&G-Reticon	135
								Filter, Switched Capacitor (7th order lowpass)	RF5609A	EG&G-Reticon	

♦ Available in Surface Mount Package

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LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Filter, Switched-Capacitor (programmable)	TSGF04	SGS-Thomson	5	Hall Effect Switches (senses magnetic field)	UGN3119U	Allegro Micro	45	Image Sensor, Photodiode (512 pixels, random access)	RL0512SR	EG&G-Reticon	100
	TSGF08	SGS-Thomson			UGN3120U	Allegro Micro		Image Sensor, Photodiode (1024 pixels, random access)	RL1024SR	EG&G-Reticon	
	TSGF12	SGS-Thomson			UGN3140U	Allegro Micro		Image Sensor, 128x1, CCD	TC102	TI	
Filter, Dual Universal	ML2110BC	MicroLinear			UGS3119U	Allegro Micro	50	Image Sensor, 500x580, CCD (B/W, PAL)	LZ22291	Sharp	105
Filter, Dual Universal (high frequency)	ML2111BC	MicroLinear			UGS3120U	Allegro Micro		Image Sensor (2048 element)	MB8033	Fujitsu	
Flasher (LED)	LM3909	National	10	Hall-Effect Switch (for alternating magnetic field)	TLE4901F	Siemens		Image Sensor, 2048x1, CCD	TC103	TI	
Fluid Detector (oscillator, balance detector)	LM1830	National		Image Area Sensor, CCD Area Sensor with 270K Pixels (for 1/2" NTSC color)	LZ2111	Sharp		Image Sensor, 3456x1, CCD	TC104	TI	
Fluid Level Detector (non-flammable fluids)	LM1042	National			LZ2112	Sharp		Image Sensor (4096 element)	MB8035	Fujitsu	
Frequency-to-Voltage Converter	451	AD		Image Area Sensor, CCD Area Sensor with 320K Pixels (for 1/2" PAL color)	LZ2121	Sharp	55	Image Sensor, 192x165, CCD	TC210	TI	110
	453	AD			LZ2122	Sharp			TC211	TI	
	MB4206	Fujitsu	15	Image Rotator	6125A	OEI		Image Sensor, 2952x1, CCD	TC106-1	TI	
	MB4207	Fujitsu		Image Sensor, Area, Linear Self-Scanning	RA0100A	EG&G-Reticon	60	Image Sensor, 754x488, CCD	TC240	TI	115
Frequency-to-Voltage Converter (precision)	CS2907	Cherry Semi			RA0128N	EG&G-Reticon			TC241	TI	
	CS2917	Cherry Semi		Image Sensor, CC Photodiode	RL0256D	EG&G-Reticon		Image Sensor, High-Speed CCD Imager	RA2048J	EG&G-Reticon	
	XR2917	Exar			RL0512D	EG&G-Reticon	65	Inductive Proximity Switch (with shortcircuit protection)	TCA305A	Siemens	120
	LM2907	National	20		RL0512R	EG&G-Reticon			TCA305B	Siemens	
	LM2917	National			RL1024D	EG&G-Reticon			TCA505A	Siemens	
	L290	SGS-Thomson			RL1282D	EG&G-Reticon		Instrumentation Amplifier	4253	TeledyneC	125
	L291	SGS-Thomson			RL1284D	EG&G-Reticon		Isolation Power Supply (3400V)	PWS750	Burr-Brown (3415)	
	L292	SGS-Thomson			RL1288D	EG&G-Reticon		Isolation Power Supply (4200V)	700	Burr-Brown (3415)	
	4736	TeledyneC	25		RL2048D	EG&G-Reticon		Lamp Monitors for 24 V Systems (trucks, buses, railroad, and marine use)	ULN2457A	Allegro Micro	130
	LM2907	TI		Image Sensor, CCD (1/6inch, 180Hx260V frame transfer)	LC9943	Sanyo		Laser Diode Driver Circuit	IR3C07/N	Sharp	
	LM2917	TI		Image Sensor, CCD Line Sensor with 2K Pixels	LZ2019	Sharp	70		IR3C08	Sharp	
Frequency-to-Voltage Converter (1 MHz)	4706	TeledyneC		Image Sensor, CCD Line Sensor (512 pixels)	LZ2018	Sharp		Level Detector, Fluid	LM903	National	135
Frequency-to-Voltage Converter (10 kHz)	4702	TeledyneC		Image Sensor, CCD (400 x 200 pixels)	RA1200J	EG&G-Reticon		Level Detector, 12-Point (for fluorescent displays)	LC7555	Sanyo	
	4714	TeledyneC	30	Image Sensor, CCD (1/3 inch color, NTSC standard)	LC9965	Sanyo		Level Meter, Analog Input Drives a Bar of LED's	LB1405	Sanyo	
	4722	TeledyneC		Image Sensor, CCD (1/3 inch, EIA TV standard, 400)	LC9931B	Sanyo		Level Meter Detector (9 levels detect/drive)	MB3764	Fujitsu	140
Frequency-to-Voltage Converter (10 kHz precision)	4708	TeledyneC		Image Sensor, Circular, Self Scanning	RO0064N	EG&G-Reticon	75	Level Translator, High-Voltage (for driving the APO130NA MOSFET array)	HT0130P	AT&T	
Frequency-to-Voltage Converter (100 kHz)	4704	TeledyneC			RO720B	EG&G-Reticon		Light Activated Switch	ZNP100	GEC Plessey	145
Frequency-to-Voltage Converter (100 kHz precision)	4710	TeledyneC		Image Sensor, Line Array	TC102-1	TI			ZNP102	GEC Plessey	
FSK Data Receiver (for radio paging circuits)	SL6639	GEC Plessey	35		TC104-1	TI		Light Sensor	ULN3311D	Allegro Micro	
Function Generator, D/A Controller	CY360	Cybernetic		Image Sensor, Linear Self Scanning	RL0064A	EG&G-Reticon	80		ULN3311T	Allegro Micro	150
Gain/Attenuator Block	ML203	MicroLinear			RL0128G	EG&G-Reticon		Linear Hall-Effect Devices	TL3103C	TI	
Gain Control, programmable gain/loss control	SC11310	Sierra			RL0128L	EG&G-Reticon			TL3103I	TI	
Gain Control (programmable gain/loss control with EEPROM)	SC22310	Sierra			RL0128S	EG&G-Reticon		Linear Macrocell Array	RLA40	Raytheon	155
Gear Tooth Sensor	UGN3056	Allegro Micro	40		RL0128SAF	EG&G-Reticon		Linear Regulator, High Speed Switching	IR3M04	Sharp	
Ground Fault Interrupter	LM1851	Raytheon			RL0256G	EG&G-Reticon					
Ground Fault Interrupter Controller, Two Wire	RU4140	Raytheon			RL0512G	EG&G-Reticon					
Ground Fault Interrupter, Low Power (for 120 or 220 volt systems)	RV4145	Raytheon			RL0512S	EG&G-Reticon					
Hall Effect Devices (sense magnetic field) See also Digital-Other Digital Devices	HKZ101	Siemens			RL1024G	EG&G-Reticon					
	TL172C	TI	50		RL1024H	EG&G-Reticon					
	TL173C	TI			RL1024S	EG&G-Reticon					
	TL3013	TI			RL1728H	EG&G-Reticon					
	TL3101	TI			RL2048H	EG&G-Reticon					
					RL4096	EG&G-Reticon					
			55		RL512SAF	EG&G-Reticon					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

Behavioral Model Available

Available in Surface Mount Package

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LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Linear Regulator, Negative Micropower	TSC664	TeledyneC		Motor Driver, Dual, Schottky Diode	UC1610	† Unitorde		Multipliers/Dividers		(Cont'd)	
					UC3610	Unitorde			RC4200	Raytheon	
Linear Regulator, Positive Micropower	TSC663	TeledyneC		Motor Speed Regulator, Auto Reverse	TDA7272	SGS-Thomson			RC4200A	Raytheon	
Linear Regulator, Positive Micropower with Battery Detect	TSC666	TeledyneC		Motor Speed Regulator (for small DC motors). See also Linear—Consumer Circuits.				Nicad QUICK CHARGE Control IC	TSC675	♦† TeledyneC	(3716)
Linear Regulator, Precision	UC3832	Unitorde			KA2401	Samsung		Op Amp (triple programmable array)	CA144	Newbridge	
	UC3833	Unitorde	5		KA2402	Samsung		Optocoupler	TIL102	TI	105
Linearized Thermocouple Input Isolation Module	SCM5B47	Burr-Brown			KA2403	Samsung			TIL103	TI	
Log/Antilog Amplifier	AD640	AD	(3346)	Multifunction Converter (generates output = (V1 + V2))	LH0094	National			TIL111	TI	
Log/Antilog Amplifier (4 decade)	759	AD	(3346)		LH0094C	National			TIL112	TI	
Log/Antilog Amplifier (6 decade)	755	AD	(3346)	Multifunction Converters (XY/Z)expM	4302	Burr-Brown	(3416)		TIL113	TI	
Logarithmic Operator (negative input)	4358	TeledyneC	10	Multiplier/Divider	AD632A	Burr-Brown	(3416)		TIL114	TI	110
	4363	TeledyneC			AD632B	Burr-Brown	(3416)		TIL115	TI	
Logarithmic Operator (positive input)	4357	TeledyneC			AD632S	† Burr-Brown	(3416)		TIL116	TI	
	4362	TeledyneC			AD632T	† Burr-Brown	(3416)		TIL117	TI	
Logic Controlled Regulator (5V/3A main, 5V/3mA aux.)	LT1035M	† LinearTech	15	Multipliers	AD539J	AD	(3346)		TIL118	TI	
Logic Controlled Regulator (5V/3A main, 5V/75mA aux.)	LT1035C	LinearTech			AD539K	AD	(3345)		TIL119	TI	115
Low Battery Indicator, Triggers on 3 V (for use with 3 NiCd cells)	ICM7201	Harris			AD539S	† AD	(3345)		TIL119A	TI	
Lowpass Filter, 5th Order Bessel (anti-aliasing, data logger)	MAX281AM	† Maxim			AD632	AD	(3346)		TIL120	TI	
	MAX281BC	Maxim			MM109	AnalogSys			TIL121	TI	
Lowpass Filter, 5th Order Bessel (anti-aliasing, data logger)	MAX281AC	Maxim			MPY534	Burr-Brown	(3416)		TIL124	TI	120
Lowpass Filter, 5th Order Bessel (anti-aliasing, data logger)	MAX281BM	† Maxim	20		XR2208	Exar			TIL125	TI	
LVDT Signal Conditioner	NE5521	Signetics			XR2208M	† Exar			TIL126	TI	
	SE5521	† Signetics			XR2228	Exar			TIL127	TI	
LVDT Signal Conditioner (DC output proportional to position)	AD598	AD	(3348)		XR2228M	† Exar			TIL128	TI	
LVDT to Digital Converter (direct ratiometric conversion)	2S58	AD	(3328)		ICL8013C	Harris			TIL128A	TI	
LVDT to Digital Converter (1 kHz to 10 kHz reference frequency)	2S50/460	† AD	25		ICL8013M	† Harris			TIL153	TI	125
	2S50/560	AD			MC1494	Motorola			TIL154	TI	
LVDT to Digital Converter (400 Hz reference frequency)	2S50/410	† AD			MC1495	Motorola			TIL155	TI	
	2S50/510	AD			MC1594	† Motorola			TIL156	TI	
LVDT-to-Digital Converter	2S82	AD			MC1595	† Motorola			TIL157	TI	
Magnetic Amplifier Control Circuit	UC1838	Unitorde	30	Multipliers/Dividers	SG1495	♦ SiliconG			TIL157A	TI	130
	UC2838	Unitorde			SG1595	♦† SiliconG			TIL186	TI	
	UC3838	Unitorde			TA7158	Toshiba			TIL187	TI	
Mask Programmable Switched-Capacitor Active Filter System	LMF120	National			AD532J	♦ AD	(3346)		TIL189	TI	
Meter Driver, Air-Core	SA5775	Signetics			AD532K	♦ AD	(3346)		TIL190	TI	
Micropower Regulator and Comparator (125 mA output current)	LT1020C	LinearTech	35		AD532S	♦† AD	(3346)		3N261	TI	135
	LT1020M	† LinearTech			AD533J	AD			3N262	TI	
Motor, Brushless DC Motor Commutator	LS7262	LSI Comp	(3564)		AD533K	AD			3N263	TI	
Motor, Brushless DC Motor Speed Controller, 4 Phase	LS7264	LSI Comp	(3564)		AD533L	AD			4N22	TI	
Motor Driver	TLP298	TI			AD533S	† AD			4N23	TI	
Motor Driver, Full Bridge, Dual	L298	Unitorde	40		AD534J	♦ AD	(3346)		4N24	TI	140
					AD534K	♦ AD	(3346)		4N25	TI	
					AD534L	♦ AD	(3346)		4N26	TI	
					AD534S	♦† AD	(3346)		4N27	TI	
					AD534T	♦† AD	(3346)		4N28	TI	
					AD538	AD	(3346)		4N35	TI	145
					MPY100	Burr-Brown			4N36	TI	
					MPY100A	Burr-Brown	(3416)		4N37	TI	
					MPY100S	† Burr-Brown	(3416)		4N47	TI	
					MPY634	Burr-Brown	(3416)		4N48	TI	
					4204	Burr-Brown			4N49	TI	150
					4204S	† Burr-Brown			6N138	TI	
					4205	Burr-Brown			6N139	TI	
					4206	Burr-Brown			Optocoupler, High DC Transfer Ratio		
					4213	Burr-Brown			MCT2	TI	
					4213S	† Burr-Brown			MCT2E	TI	
					4213U	Burr-Brown			Optocoupler/Optoisolator		
					4213V	Burr-Brown			4N45	TI	155
					4213W	Burr-Brown			4N46	TI	
					4214	Burr-Brown			Optocoupler/Optoisolator, High Speed		
					4214M	† Burr-Brown			HCPL2601	TI	
						(Continued)	100		Optocoupler/Optoisolator (3KV isolation)		
									HCPL2531	TI	
									Optocoupler/Optoisolator (3KV isolation)		
									HCPL2530	TI	160
									HCPL2730	TI	
									HCPL2731	TI	
									Optocoupler/Optoisolator (3535 V peak isolation)		
									TIL3009	TI	
									TIL3010	TI	
									TIL3012	TI	
									Optocoupler, single channel (3535 V peak isolation)		
									TIL191A	† TI	165

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Optocoupler, Single Channel (3535 V peak isolation)	TIL11B	† TI	5	Optoisolator (4000 Vrms isolation)	H11N1	Harris	55	PIN Diode Driver	UDS5791H	† Allegro Micro	105
	TIL12B	TI			H11N2	Harris			DH0035	† National	
	TIL191	† TI		Oscillator Accessory	FLJAC01	Datel			DH0035C	National	
	TIL192	† TI		Oscillator, Crystal Clock (250 kHz to 60 MHz)	CK1100A	Solarise		Pluse Width Modulator Controller	UC3845	SGS-Thomson	
	TIL192A	TI			CK1114A	Solarise		Potentiometer, E ²	X9102	Xicor	
Optocoupler, Dual-Channel (1.5 kV isolation)	4N55	Micropac	10		CK1144A	Solarise	60		X9103	Xicor	110
	6N134	Micropac			CK1145A	Solarise			X9103M	† Xicor	
	66026	Micropac		Oscillator, Resistor Tuneable	ROJ20	Datel			X9104	Xicor	
	66056-002	Micropac							X9104M	† Xicor	
	66058-002	Micropac		Oscillator, Quadrature	4423	Burr-Brown			X9503	Xicor	
	66071	Micropac	15			(3417)	65		X9503M	† Xicor	115
	66072	Micropac		Peak Detector (for data transfer rates up to 30 mbit/s)	AD892	AD		Potentiometer, E ² (with 8-bit DAC and voltage reference)	SC22300	Sierra	
Optocoupler, Dual-Channel (16 kV isolation)	66005-002	Micropac				(3353)		Potentiometer, Dual Double	TDA1074A	Signetics	
Optocoupler, Dual-Channel (40 kV isolation)	66004-002	Micropac		Phase Accumulator (for DDS Application)	AD9950	AD		Potentiometer, 3 1/2-Digit BCD	AD7525K	◊ AD	
Optocoupler, Four channel (3535 V peak isolation)	TIL193	TI		Phase Detector, CMOS	IM14345	IMI			AD7525L	◊ AD	
	TIL193A	TI	20	Phase/Frequency Comparator (1 GHz)	10G044-2	TriQuint	70		AD7525U	◊† AD	120
	TIL193B	TI		Phase/Frequency Comparator (750 MHz data rate)	16G044-3	GigaBit		Potentiometer, 5-Volt Only (nonvolatile)	X9MME	Xicor	
Optocoupler, Four-Channel (1.5 kV isolation)	6N140	Micropac		Phase/Frequency Discriminator (digital)	AD9901	AD		Precision Centigrade Temperature Sensors	LM35	National	
Optocoupler (1 kV isolation)	4N22	Micropac		Photo Coupler, AC/DC Input	NJL5126D	NJR			LM35A	National	
	4N22A	Micropac		Photo Coupler, High Current Transfer	NJL5121D	NJR	80		LM35C	National	
	4N23	Micropac	25	Photo Coupler (interface for computer)	NJL5151D	NJR			LM35CA	National	
	4N23A	Micropac			NJL5152D	NJR		Precision Fahrenheit Temperature Sensor	LM34	National	125
	4N24	Micropac		Photo Detector (for audio systems)	NJL7112E	NJR			LM34A	National	
	4N24A	Micropac			NJL7141E	NJR			LM34C	National	
	4N47	Micropac	30	Photo Detector (for card readers, photoelectric switches, etc.)	NJL7260B	NJR	75		LM34CA	National	
	4N48	Micropac		Photo Detector (for smoke detectors)	NJL611B	NJR		Pressure Sensors, Piezoresistive (integral gain-set resistor)	1210	IC Sensors	130
	4N49	Micropac			NJL612B	NJR			1220	IC Sensors	
Optocoupler (1.5 kV isolation)	3N243	Micropac			NJL7260E	NJR		Proximity Detector, Electromagnetic	CS209	Cherry Semi	
	3N244	Micropac		Photo Detector (for photodiode for remote control TV and audio)	NJL6143A	NJR	85	PWM Controller IC, Isolated, 120/220VAC Input, DC Output	PWR-SMP520	Power Integ	
	3N245	Micropac	35	Photo Reflector (for copy machines, paper sensor)	NJL6144L	NJR		PWM Power Supply IC, Isolated, 120VAC Input, 10W Regulated DC Output	PWR-SMP110	Power Integ	135
	66022	Micropac			NJL6145L	NJR		PWM Power Supply IC, Isolated, 120VAC Input, 20W Regulated DC Output	PWR-SMP120	Power Integ	
	66053	Micropac		Photo Reflector (for detection of motor rotation)	NJL5141EA	NJR		PWM Power Supply IC, Isolated, 30–100VDC Input, 5W Regulated DC Output	PWR-SMP400	Power Integ	
	66056-001	Micropac			NJL5146EA	NJR		RDS Decoder	SDA1000	◊ Siemens	
	66058-001	Micropac		Phototransistor	TIL601	TI	90	Reference Voltage, Dual, 7V	LT1034BC	LinearTech	140
	66063	Micropac	40		TIL602	TI			LT1034BM	† LinearTech	
Optocoupler (16 kV isolation)	66005-001	Micropac			TIL603	TI			LT1034C	LinearTech	
Optocoupler (40 kV isolation)	66004-001	Micropac			TIL604	TI			LT1034M	† LinearTech	
Optoelectronic switch, Twilight Sensor	ULN3390D	Allegro Micro			TIL604HR2	TI	95	Reference Voltage, 2.5V	LT580J	LinearTech	145
Optoisolator, Buffer Open-Collector Output (5kV peak isolation)	OPI8013	TI	45		TL603	TI			LT580K	LinearTech	
Optoisolator, Buffer Totem-Pole Output (5kV peak isolation)	OPI8012	TI			1N5722	TI			LT580L	LinearTech	
Optoisolator, Inverter Open-Collector Output (5kV peak isolation)	OPI8015	TI			1N5723	TI			LT580M	LinearTech	
Optoisolator, Inverter Totem-Pole Output (5kV peak isolation)	OPI8014	TI			1N5724	TI			LT580S	† LinearTech	
Optoisolator, Open-Collector Output (3kV dc isolation)	HCPL2502	TI	50		1N5725	TI	100		LT580T	† LinearTech	150
	6N135	TI						Reference Voltage, 5V	LT1021C-5	LinearTech	
	6N136	TI							LT1021M-5	† LinearTech	
	6N137	TI		Optoisolator, Dual Open-Collector Output (3kV dc isolation)	HCPL2630	TI		Reference Voltage, 6.9V	LM129	† LinearTech	
Optoisolator, Dual Open-Collector Output (3kV dc isolation)	HCPL2630	TI		Optoisolator (2500 Vrms isolation)	H11N3	Harris			LM329	LinearTech	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Reference Voltage, 7V				RS-170 7 Frame 512x512x8 Image Integrator				Sample and Hold Circuits		(Cont'd)	
LTZ1000	LinearTech			67156	OEI			SHC76	Burr-Brown	(3419)	
LTZ1000A	LinearTech			RS-170 512x512x8 Frame Buffer				SHC76K	Burr-Brown		
LT1021C-7	LinearTech			67145	OEI		55	SHC803	Burr-Brown	(3420)	
LT1021M-7	† LinearTech							SHC804	Burr-Brown	(3420)	115
Reference Voltage, 10V				Sample and Hold Amplifier				SHC85	Burr-Brown	(3419)	
LH0070	LinearTech		5	AD681	AD			SHC85ET	Burr-Brown		
LT1021C-10	LinearTech			AD683	AD			CS3112	Crystal		
LT1021M-10	LinearTech			AD684	AD	(3332)		SHMHUMC	Datel	(3441)	
LT1031C	LinearTech			SHA1144	AD			SHMHUMM	† Datel	(3441)	120
LT1031M	† LinearTech		10	SHC702	Burr-Brown	(3420)	60	SHM20C	Datel	(3441)	
LT581J	LinearTech							SHM40MC	Datel	(3441)	
LT581K	LinearTech			SHMHU	Datel	(3441)		SHM40MM	† Datel	(3441)	
LT581L	LinearTech			SHM30C	Datel	(3441)		SHM45MC	Datel	(3441)	
LT581S	† LinearTech			HA5340	Harris			SHM45MM	† Datel	(3441)	125
LT581T	† LinearTech							SHM4860MC	Datel		
LT581U	† LinearTech			Sample and Hold Amplifier (16-bit)				SHM4860MM	† Datel		
				AD1154	AD	(3332)		SHM6MC	† Datel	(3441)	
Regulator, 3 Amp Adjustable (negative)				Sample and Hold Circuit			65	SHM6MM	† Datel	(3441)	
UC1033	Unitrode			SH376	Adv Analog			SHM7MC	Datel	(3441)	130
Relay, High-Voltage Solid-State				SHA2200	Analogic			SHM91MC	Datel	(3441)	
LH1193A	AT&T			SHA2410	Analogic			HA2420-2	◊ Harris		
Relays, High Voltage, Optically Coupled				SCS3001	STC			HA2420/883	◊ Harris		
LH1061A	AT&T							HA2425-5	† Harris		
Resistor Tunable Oscillator.				Sample and Hold Circuit (dual high-performance)				HA5320-2	◊† Harris		135
ROJ1K	Datel			SHA2400	Analogic			HA5330-2	◊† Harris		
Resolver and Synchro Systems				Sample and Hold Circuit (quad)			70	HA5330/883	◊ Harris		
MSC2520	AD		20	SMP04	AD			LF198	† LinearTech		
SDC1740	AD			Sample and Hold Circuit, Octal				LF198A	† LinearTech		
SDC1741	AD			CEM5508	OnChip Sys			LF398	LinearTech		140
SDC1742	AD							LF398A	LinearTech		
1S14	AD			Sample and Hold Circuit, 12-Bit Quad				MN343	MicroNet		
1S20	AD			MSH840	Datel	(3441)		MN343H	† MicroNet		
1S24	AD			Sample and Hold Circuit (12-bit, 200 ns)				MN344	MicroNet		
1S40	AD			SHM49	Datel	(3441)		MN344H	† MicroNet		145
1S44	AD			Sample and Hold Circuit (12-bit, 30 ns)				MN346	MicroNet		
1S60	AD			SHM43	Datel	(3441)		MN346H	† MicroNet		
1S61	AD							MN347	MicroNet		
1S64	AD		30	Sample and Hold Circuits				MN347H	† MicroNet		
1S74	AD			A880	Adv Analog		75	MN375A	MicroNet		150
2S20	AD			A882	Adv Analog			MN7130	MicroNet		
5S70	AD			SH346	† Adv Analog			MN7130H	† MicroNet		
5S72	AD			SH347	† Adv Analog			LF198	† National		155
HMSDC-8700	ILC-DDC			ADSHC-85	AD		80	LF198A	† National		
				ADSHC-85E	† AD			LF298	National		
Resolver, Digital to Resolver Converter (DRC)				ADX346	AD			LF298A	National		
DRC1765	† AD			AD346	AD	(3332)		LF398	National		
DRC1766	† AD			AD582K	AD	(3332)		LF398A	National		
DRC10520	ILC-DDC			AD582S	† AD	(3332)	85	LH0023	† National		160
				AD583K	AD	(3332)		LH0023C	National		
Resolver/Synchro-to-Digital Converter, Dual Channel				AD583S	† AD	(3332)		LH0043	† National		
(with loss of track detection)				AD585J	◊ AD	(3332)		LH0043C	National		
AD2S44	AD	(3329)	40	AD585S	◊† AD			LH0053	† National		
Resolver/Synchro-to-Digital Converter (1.3 arc min)				HTC0300	AD			LH0053C	National		
AD2S46	AD	(3328)		HTC0500	AD		90	5021	OEI		165
Resolver to Digital Converter (10-bits)				HTS0025	AD			5025	OEI		
RDC630	ILC-DDC			SMP10A	† AD	(3332)		LF198	† Signetics		
Resolver to Digital Converter (12-bits)				SMP10B	† AD	(3332)		LF398	Signetics		
RDC632	ILC-DDC			SMP10E	AD	(3332)		NE5537	Signetics		
Resolver to Digital Converter (14-bits)				SMP10F	AD	(3332)		SE5537	† Signetics		170
RDC634	ILC-DDC			SMP11A	† AD	(3332)	95	HS346	Sipex-HSD		
				SMP11B	◊† AD	(3332)		HS9704	Sipex-HSD		
Resolver-to-Digital Converter				SMP11E	AD	(3332)		HS9705	Sipex-HSD		
RDC1740	AD		45	SMP11F	AD	(3332)		HS9714K	Sipex-HSD		
RDC1741	AD			SMP11G	AD	(3332)	100	HS9714TB	† Sipex-HSD		175
RDC1742	AD			SMP81E	AD	(3332)		HS9716K	Sipex-HSD		
				SSM2300	AD	(3354)		HS9716TB	† Sipex-HSD		
Resolver-to-Digital Converter, Variable Resolution				MP260	Analogic		105	HS9720	Sipex-HSD		
AD2S80A	AD	(3328)		MP271	Analogic			SP5330	Sipex-HSD		
AD2S81A	AD	(3328)		MP282A	Analogic			CSH101A	† TeledyneC		180
AD2S82A	AD	(3328)	50	SHC298A	Burr-Brown	(3419)		4856	TeledyneC		
Resolver-to-Digital Converter, Dual Channel (on-board oscillator)				SHC5320K	Burr-Brown	(3419)		4860	TeledyneC		
AD2S34	AD	(3328)		SHC5320S	Burr-Brown	(3419)		4860HR	† TeledyneC		
Ring Demodulator/Balanced Mixer				SHC600B	Burr-Brown	(3419)	110				
SI8901A	Siliconix			SHC601B	Burr-Brown	(3420)		Sample and Hold Circuits (octal with multiplexed input)			
RS-170 Image Processor, 512x512x8 Differential Buffer								SMP08	AD		
67149	OEI										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Sample and Hold (hybrid)	AH20016	Analogic		Solid State Thermastat IC	TSC620	♦† TeledyneC (3716)		Switched Capacitor Voltage Converter	LT1054C	LinearTech	
Sample-and-Hold Amplifier					TSC621	♦† TeledyneC (3716)			LT1054M	† LinearTech	
LF198	† TI			Sonar Ranging Module	TL851	TI	40	Switched Capacitor Voltage Converter (positive to negative)	LMC7660	National	85
LF198A	† TI			TL853	TI			Switched-Mode Power Supply Control Circuit	TDA4919	Siemens	
LF398	TI			Sonar Ranging Receiver	TL852	TI		Switched-Mode Power Supply Controller Set (chip set)	ICL7675	Harris	
LF398A	TI		5	Strain Gauge Input Module	5B38	AD		ICL7676	Harris		
Sample-and-Hold Amplifier with Multiplexed Input, Octal	SMP08F	AD (3332)		Streaming Tape Read/Write Control	TL041	TI	45	Switches	ICL8018AC	Harris	90
Sample-and-Hold Amplifier, Two Channel (900 ns)	AD682	AD (3331)		Super Fast 12-Bit Track-Hold Amplifier	LH4860	National		ICL8018AM	† Harris		
Sample-and-Hold Amplifier, 12-Bit	SP9730	Sipex-HSD		Switch Bank, Programmable EEPROM Digital/Analog				ICL8019AC	Harris		
Sample-and-Hold Amplifier, 16-Bit	SP9760	Sipex-HSD		Switch Bank and Memory Circuit	SC22304	Sierra		ICL8019AM	† Harris		
Sample-and-Hold Amplifier (900 ns)	AD781	AD (3332)	10	Switch, Industrial (1 amp relay driver)	LM1921	National		ICL8020AC	Harris		
Sample-and-Hold Amplifier, Quad CMOS	SMPO4E	AD		Switch, Solid-State (1 amp with built-in error detection circuit)	LM1951	National		ICL8020AM	† Harris		
SCR/TRIAC Control (phase control)				Switched Capacitor Active Filter, Triple One-Third Octave	LMF380	♦ National	50	Switchmode Driver for DC Motors	L292	Unitrode	95
UAA145	AEG Corp			Switched Capacitor Bandpass Filter, Pin Programmable	MAX267C	Maxim		Switchmode Pulse Width Modulation Control Circuit	MC34060	Motorola	
UAA146	AEG Corp				MAX267M	† Maxim		MC35060	† Motorola		
U208B	AEG Corp				MAX268C	Maxim		TL494I	Motorola		
U212B	AEG Corp		15		MAX268M	† Maxim		Synchro and Resolver to BCD Tracking Converter, 5-Decade, Pin-Programmable	SDC14700	ILC-DDC	
Secondary Protectors (for protection of switch line units)								Synchro/Resolver, reference Oscillator	REF15001	ILC-DDC	100
LH1150A	AT&T							Synchro to Digital and Resolver to Digital Converter, 1 and 36 Speed	SDC361	ILC-DDC	
LH1150B	AT&T							SDC362	ILC-DDC		
LH1150C	AT&T							Synchro to Digital Converter, 10- to 14-Bit Programmable Resolution	SDC14560	ILC-DDC	
Security Code Generator/Detector	HC2063	Hughes						Synchro to Digital Converter (10-bits)	SDC630	ILC-DDC	
Security Detector, Data Receiver/Transmitter	CS212	Cherry Semi	20					Synchro to Digital Converter (12-bits)	SDC632	ILC-DDC	105
Sensor/Controller, Air Temperature	MS120	AnalogSys						Synchro to Digital Converter (14-bits)	SDC634	ILC-DDC	
Sensor/Controller, Ground Moisture and Liquid Level	MS211	AnalogSys						Temperature and Air Flow Sensor	UC1730	† Unitrode	
Sensor/Controller, Relative Humidity	MS214	AnalogSys						UC2730	Unitrode		
Sensor Interface Circuit (for current sensing)	AD22050	AD (3353)						UC3730	Unitrode		
Sensor Transmitter, 4–20 mA	AD693	AD (3348)	25					Temperature Sensor with Signal Conditioning	AD22100	AD (3353)	110
Sensor, Ultrasonic Object Detector (position and distance)	MS118	AnalogSys						Temperature, Set-Point Controller	AD596	AD (3348)	
Servo Amplifier, for Motor Control	ZN409CE	GEC Plessey						AD597	AD (3348)		
Servo Controller, Proportional Control								Temperature Transducers			
XR2264	♦ Exar							AD590I	♦† AD (3347)		
XR2265	♦ Exar							AD590J	♦† AD (3347)		
Servo Controller, Radio Controlled Cars, 2 Channel	XR2266	Exar	30					AD590K	♦† AD (3347)		115
Signal Conditioning Module	SCM100B	Datel						AD590L	♦† AD (3347)		
Signal Multiplier, Wide Bandwidth (Modulator/demodulator)	MPY600	Burr-Brown (3416)						AD590M	♦ AD (3347)		
Signal Processor, Real Time Digital Processing of Analog Signals (programmable)								AD592	† AD (3347)		
2920	Intel							REF02	♦‡ AD (3333)		120
2921	Intel							REF02A	♦ AD (3333)		
Sine/Cosine Generator	HC2062	Hughes	35					REF02C	♦‡ AD (3333)		
Sinusoidal Line-Current Consumption Circuit (active harmonics filter)	TDA4816	Siemens						REF02D	♦ AD (3333)		
Smoke Detector, Interconnectable	MC14468	Motorola						REF02E	♦ AD (3333)		
Solid State Thermal Switch	TSC626	♦† TeledyneC (3716)						REF02H	♦ AD (3333)		
								REF05A	AD (3333)		125
								REF05B	† AD (3333)		
								AD590I	† Harris		
								AD590J	† Harris		
								LM134	† LinearTech		130
								LM234	LinearTech		
								LM134	† National		
								LM135	‡ National		
								LM234	National		
								LM235	National		
								LM334	National		135
								LM335	National		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

LINEAR—Other Devices (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Temperature Transducers (Cont'd)				Trigonometric Function Generator (sine, cosine, tan, etc. and inverse functions)				Voltage Detector (for power fail monitoring) (Cont'd)			
LM3911	National			AD639A	AD	(3347)	50	S80741	Seiko Instr	(3622)	
TDB0135	† SGS-Thomson			AD639B	AD	(3347)		S80744	Seiko Instr	(3622)	
TDC0134	† SGS-Thomson			AD639S	† AD						
Thermocouple Cold Junction Compensator				True RMS-to-DC Converter				Voltage Detector/Dual Comparator			
LT1025AC	LinearTech		5	MX536A	o† Maxim			NJM2078	NJR		
LT1025AM	† LinearTech			MX536	o† Maxim			Voltage to Frequency Converter			
LT1025C	LinearTech			Universal Dual Filter Building Block (tracking, telecom)			55	VFC32WM/883B	† Burr-Brown	(3422)	95
LT1025M	† LinearTech			LTC1060AC	LinearTech			Voltage-to-Frequency Converter, 5 MHz	VFV-5MC	Date!	
Threshold Switch (oscillator, switch with hysteresis)				LTC1060AM	† LinearTech			Voltage-to-Frequency Converter, 10 MHz	VFV-10MC	Date!	
TCA105	Siemens			LTC1060M	† LinearTech			Voltage-to-Frequency Converter (3500Vrms)	ISO109	Burr-Brown	
Threshold Switch (2/3 supply voltage)				Universal Triple Filter Building Block, (tracking, antialiasing)				Window Comparator with Latch (threshold detector)	AD1317	AD	(3352)
TCA345A	Siemens			LTC1061AC	† LinearTech			Window Discriminator (indicates voltage above, below, inside, or outside two adjustable limits)	TCA965	Siemens	100
Timer/Divider, Programmable				LTC1061AM	† LinearTech			Zero Voltage and Zero Crossing Triggers (triac and SCR control)	TEA1024	AEG Corp	
TC5043	Toshiba	(3727)	10	Variable Differential Transformer Demodulator (interfaces LVDT or RVDT sensor for servo loop control)				U217B	AEG Corp		
Tone Decoder (traffic signal control and detector)				VDTDemod	Honeywell			CA3079	† Harris		
LA2200	Sanyo			VCA (Voltage Controlled Amplifier, dual)			60	CA3059	Motorola		105
Touch Control Lamp Switch AC Power Controller with Auto Shut-Off Timer				CEM3381	OnChip Sys			CA3079	Motorola		
LS7338	LSI Comp	(3564)		CEM3382	OnChip Sys			UAA1016A	Motorola		
Touch Control Lamp Switch/AC Power Switch with Auto Shut-Off Timer				Video Amplifier, Wideband				UAA1016B	Motorola		
LS7339	LSI Comp	(3564)		MB3501	Fujitsu			TCA785	† Siemens		
LS7340	LSI Comp	(3565)		Video Buffer, 40 MHz			65	TDA1023	Signetics		110
Track and Hold				MAX452C	Maxim			TA7606	Toshiba		
AD389	AD	(3332)	15	MAX452M	† Maxim			Dual Inverting/Non-Inverting 1.5A Power Device Driver.	IXLD4428	IXYS	
HTS0010	AD			Video Buffer, 40 MHz (With 2-Channel Multiplexer)				Dual Inverting/Noninverting 3A Power Device Driver.	IXLD4425	IXYS	
CLC940AI	Comlinear			MAX453C	Maxim			Dual Inverting 1.5A Power Device Driver.	IXLD4426	IXYS	
CLC940AM	† Comlinear			MAX453M	† Maxim			Dual Inverting 3A Power Device Driver.	IXLD4423	IXYS	115
ADC00304	ILC-DDC			Video Buffer, 40 MHz (With 4-Channel Multiplexer)				Dual Non-Inverting 1.5A Power Device Driver.	IXLD4427	IXYS	
ADC00310	ILC-DDC		20	MAX454C	Maxim			Dual Smart Switch	UC1728	Unitrode	
THA05203	ILC-DDC			MAX454M	† Maxim			10-BIT, 20nsec T/H Amplifiers	MN4000	MicroNet	
TH8530	ILC-DDC			Video Buffer, 40 MHz (With 8-Channel Multiplexer)				12-BIT, 10nsec T/H Amplifiers	MN4001	MicroNet	
MN0300A	MicroNet			MAX455C	Maxim			4 pole Cont. Low Pass/Band Pass Filter	MAX275	o† Maxim	120
MN050	MicroNet			MAX455M	† Maxim			4th Order Elliptic Notch Filter	LMF90	National	
MN373	MicroNet		25	Video Level Comparator				5th Order, Zero DC Error, Low Pass Filter	LTC1062	o† Maxim	
MN376	MicroNet			VLC931	ThirdDomain			MAX280	o† Maxim		
MN377	MicroNet			Video Switch (5 MHz bandwidth)				8 pole Cont. Low Pass/Band Pass Filter	MAX274	o† Maxim	
MN379	MicroNet			LM1044	National			8th order, clock-Tunable Low Pass Filters	MAX292	o† Maxim	125
4866	TeledyneC			Voice Coil Driver							
Track and Hold Amplifier (16-bit)				HA13447	Hitachi						
AD386	AD	(3332)	30	Voiceband Receive Filter (for 14-bit ADC)							
Track and Hold Amplifier (10 ns settling time)				AD7371	AD	(3355)					
MNHT0025	MicroNet			Voiceband Transmission Filter (for 14-bit DAC)							
MNHT1010	MicroNet			AD7341	AD	(3355)	75				
Track and Hold Amplifier (12 ns acquisition time)				Voltage Comparator, Single							
AL1210A	Acculin			M51202	Mitsubishi						
AL1210J	Acculin			Voltage Comparator, Dual							
AL1210S	† Acculin		35	M5233	Mitsubishi						
Track and Hold Amplifier (5 ns settling time)				Voltage Comparator, Quad							
MNHT0010	MicroNet			GL339	GoldStar						
Track and Hold (4-channel simultaneous)				M5234	Mitsubishi						
CS31412	Crystal			Voltage Converter (4-10V input, ± 7V to ± 18V output)							
Track and Hold (13-bit with controlled hold time)				LT1026C	LinearTech						
DGL13	ILC-DDC			LT1026M	† LinearTech						
Track-and-Hold Amplifier (0.1 μs acquisition time)				Voltage Detector (for power fail monitoring)							
HTC0300A	AD			S8052	Seiko Instr						
Track-and-Hold Amplifier (20 ns settling time)				S8054	Seiko Instr						
VN1025	Vanguard Semi		40	S80721	Seiko Instr	(3622)					
Track-Hold Amplifier				S80725	Seiko Instr	(3622)					
4853	TeledyneC			S80727	Seiko Instr	(3622)					
4855	TeledyneC			S80730	Seiko Instr	(3622)					
4858	TeledyneC			S80732	Seiko Instr	(3622)					
Traffic Information Control System (ARI-DK type)				S80733	Seiko Instr	(3622)					
LA2211	Sanyo			S80734	Seiko Instr	(3622)					
Transmitter, Two-Wire (converts voltage from a sensor to a current)				S80740	Seiko Instr	(3622)	90				
LH0045	National		45								
LH0045C	National										
Transversal Filter, Quad Chirped (for discrete Fourier transform and power spectral density applications)											
RT5602A	EG&G-Reticon										
Triac Angle Firing Control Circuit											
TDA1185	Motorola										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

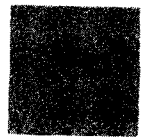
*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

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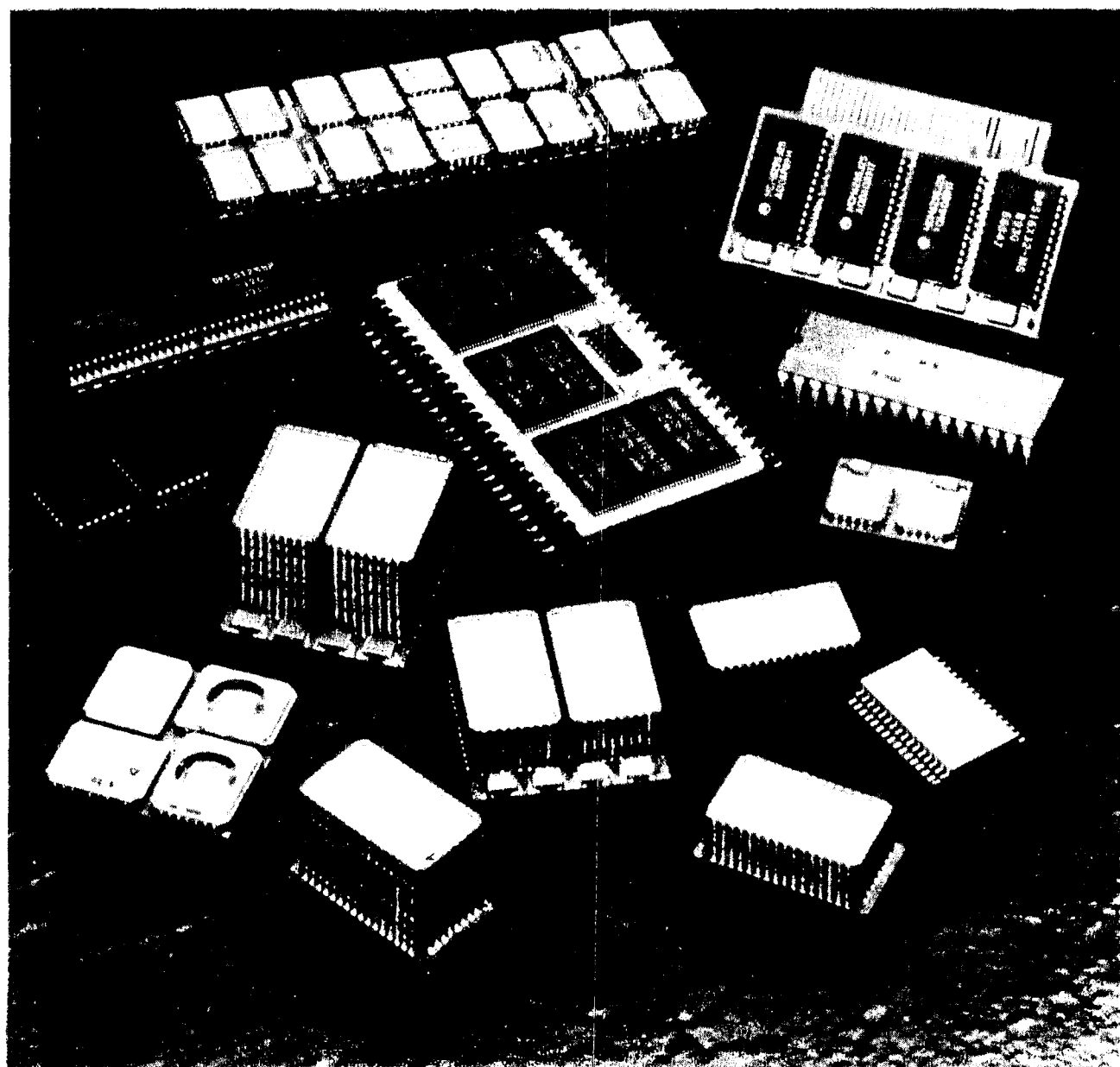
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SHORT FORM CATALOG



Dense-Pac Microsystems

INTRODUCTION TO MEMORY

The Memory Section provides initial selection information and data on E²PROMs, RAMs, and ROMs as well as other memory devices. In these particular sections, the devices are characterized by organization (words and bits/word) and by access times. In order to assure that the access times are comparable, whenever possible the times are shown in nanoseconds over the full rated temperature range for the devices (i.e., 0° to 70°C for commercial units and -55°C to 125°C for military units). "Typical" values are invariably much faster than the guaranteed ones so that such listings place these memories higher on the list than they otherwise would appear.

Category

- Character Generators

- FIFOs

- ROMs

 - Mask Programmable-

 - General Purpose

- PROMs

 - Fuse Programmable

 - General Purpose

 - Modules

- EPROMs

 - UV Erasable

 - General Purpose

 - Modules

 - One-Time Programmable

 - General Purpose

- Flash Memories

 - General Purpose

 - Modules

- E²PROMS

 - Electrically Erasable

 - General Purpose

 - Modules

- RAMs

 - Dynamic

 - General Purpose

 - Modules

 - Multiport

 - Video

 - Static

 - General Purpose

 - Modules

 - Multiport

 - NOVRAMs

 - Cache Tag

- Plug-In Cards

MEMORY—Character Generators

Format	Number of Output Lines	Input Logic levels	Supply Voltage, V	Device	Source	Line
5x7	1	TTL	5	DM76S64	† National	5
				DM86S64	National	
	35	TTL	5	MSL9650	OKI	
7x9	1	TTL	5	DM76S64	† National	5
				DM86S64	National	
7x11	1	TTL	5	CRT8002	SMC	
14 Segments						10
14	TTL	5	MSL9664	OKI		
			MSL9665	OKI		
16 Segments						10
16	TTL	5	MSL9662	OKI		
			MSL9663	OKI		
18x16 Japanese						10
16	TTL	5	MSM28101A	OKI		
			MSM28201A	OKI		

MEMORY

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—First-in First-out

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	
16	4	8	5	9403A	National	5	64	4	25	5	CY7C403-25C	(Cont'd)	60	
			3-15	CD40105B	† Harris							* Cypress		
		10	5	54F403	† National							CY7C403-25M		*† Cypress
				74F403	National							IDT72401		IDT
		12	5	N9403	Signetics							IDT72403		IDT
				SN54LS222A	† TI	10			28.5	5	CY7C401-25C	* Cypress	65	
				SN54LS224A	† TI									
				SN74LS222A	TI		5	7	5		C57402	*† AMD		
				SN74LS224A	TI						57402	◊† AMD		
		20	5	SN74ALS229A	TI				10	5		C57402A		*‡ AMD
				SN74LS227	TI	15					C67402	* AMD	70	
				SN74LS228	TI							57402A		◊† AMD
5	10	5	5	SN74S225	TI							67C402-10		AMD
9	—	5	5	74HCT7030	Signetics							67C4023-10		AMD
				74HC7030	Signetics							67402		◊* AMD
32	8		5	AM2812	Scorpion Tech (3620)	20					CY7C402-10C	Cypress	75	
		0.5	-12,5	MJ2812	GEC Plessey							CY7C404-10C		Cypress
	9		5	AM2813	Scorpion Tech (3620)				15	5		C67402A		* AMD
		0.5	-12,5	MJ2813	GEC Plessey							67C402-15		AMD
												67C4023-15		AMD
63	8		5	M66300	Mitsubishi	25					67C4033-10	AMD	80	
64	4		5	AM2841	Scorpion Tech (3620)							67C4033-15		AMD
				AM3341	Scorpion Tech							67402A		◊* AMD
												CY7C402-15C		Cypress
												CY7C404-15C		Cypress
						30							85	
						35							90	
						40							95	
						45							100	
						50							105	
						55							110	
						128							132/128	
						9							110	
						9							110	
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† Mil Temp Range (-55° to 125°C)

Bold face indicates additional data is provided on the page noted.

MEMORY—First-in First-out (Cont'd)

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line
512	9	22.2	5	MS7201A-35 KM75C01A-35	◊ Mosel (Cont'd)		512	9	50	5	LH5496-20 V77201-20	Sharp VLSI Tech	(3625)
				◊ Samsung					66.7	5	QS8201-15 QS8211-15	◊ Quality Semi ◊ Quality Semi	50
				V61C01-35 V61C01-35L	Vitellic (3747) Vitellic (3747)	5			71.4	5	CY7C441-14C CY7C441-14M	Cypress Cypress	
25			5	CY7C420-30C CY7C420-30M CY7C421-30C CY7C421-30M	◊ Cypress (3436) ◊ Cypress (3436) ◊ Cypress (3436) ◊ Cypress (3436)		1K	5		5	M66250 M66251	Mitsubishi Mitsubishi	55
				IDT7201LA-40B IDT7201SA-40B	◊ IDT ◊ IDT	10			20	5	MKB4505M-50 MK4505M-50	SGS-Thomson SGS-Thomson	
27			5	IDT7201LA-35 IDT7201SA-35	◊ IDT ◊ IDT				30	5	MKB4505M-33 MK4505M-33	SGS-Thomson SGS-Thomson	60
28			5	QS7201-25 QS7211-25	Quality Semi (3613) Quality Semi (3613)	15			40	5	MKB4505M-25 MK4505M-25	SGS-Thomson SGS-Thomson	
28.5			4	MT52C9005 883C-25 AM7201-25	MicronTech AMD				9	5	IDT7202LA-25 IDT7202LA-30B IDT7202SA-25	◊ IDT ◊ IDT ◊ IDT	65
			5	CY7C420-25C CY7C421-25C CY7C421-25M MT52C9005-25	◊ Cypress (3436) ◊ Cypress (3436) ◊ Cypress (3436) MicronTech (3581)	20				5	DS2010-12 DS2010-15	◊ Dallas ◊ Dallas	
				MT52C9005 883C-40 MT52C9007-25	MicronTech MicronTech				7	5	IDT7202LA-120 IDT7202LA-120B IDT7202SA-120 IDT7202SA-120B	◊ IDT ◊ IDT ◊ IDT ◊ IDT	70
				MS7201A-25 KM75C01A-25	◊ Mosel	25					QS7202-120 QS7212-120	Quality Semi (3613) Quality Semi (3613)	
28.6			5	LH5496-35 CY7C420-20C CY7C420-25M	Sharp (3625) Cypress (3436) Cypress	30			10	5	IDT7202LA-80 IDT7202LA-80B IDT7202SA-80 IDT7202SA-80B	◊ IDT ◊ IDT ◊ IDT ◊ IDT	75
33			-20 -75								MS7202-80 QS7202-80 QS7212-80	◊ Mosel Quality Semi (3613) Quality Semi (3613)	80
			5	QS7201-20 QS7211-20	Quality Semi (3613) Quality Semi (3613)						KM75C02A-80 V61C02-80 V61C02-80L	◊ Samsung Vitellic (3747) Vitellic (3747)	
33.3			5	CY7C421-20C CY7C441-30C CY7C441-30M	◊ Cypress (3436) Cypress Cypress	35			12	5	IDT7202LA-65 IDT7202LA-65B IDT7202SA-65 IDT7202SA-65B	◊ IDT ◊ IDT ◊ IDT ◊ IDT	85
				MT52C9005-20 MT52C9007-20	MicronTech (3581) MicronTech				12.5	5	CY7C424-65M CY7C425-65C CY7C425-65M DS2010-80	◊ Cypress (3436) ◊ Cypress (3436) ◊ Cypress (3436) ◊ Dallas	90
40			5	MT52C9005-15 MT52C9007-15 QS7201-15 QS7211-15	MicronTech (3581) MicronTech (3581) Quality Semi (3613) Quality Semi (3613)	40					KM75C102A-80 V61C02-65 V61C02-65L	◊ Samsung Vitellic (3747) Vitellic (3747)	95
				KM75C101A-25 75C101A-25	◊ Samsung ◊ Samsung								
50			5	CY7C441-20C CY7C441-20M KM75C01A-20 KM75C101A-20 75C101A-20	Cypress Cypress ◊ Samsung ◊ Samsung ◊ Samsung	45							

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—First-in First-out (Cont'd)

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line
1K	9	15	5	IDT7202LA-50	(Cont'd)		1K	9	28.5	5	MS7202-25	◊ Mosel	
				◊ IDT							KM75C02A-25	◊ Samsung	50
				IDT7202LA-50B							KM75C102A-35	◊ Samsung	
				◊ IDT							LH5497-35	◊ Sharp (3625)	
				IDT7202SA-50							VT7202-35	VLSI Tech	
				◊ IDT									
				IDT7202SA-50B									
				◊ IDT									
				MS7202-50	◊ Mosel	5			33	5	CY7C424-40C	◊ Cypress (3436)	55
				QS7202-50	Quality Semi (3613)						CY7C425-20C	◊ Cypress (3436)	
				QS7212-50	Quality Semi (3613)						CY7C425-25M	◊† Cypress (3436)	
				V61C02-50	Vitellic (3747)						QS7202-20	Quality Semi (3613)	
				V61C02-50L	Vitellic (3747)						QS7212-20	Quality Semi (3613)	
		15.4	5	CY7C424-65C	◊ Cypress (3436)	10							
				DS2010-65	◊ Dallas				33.3	5	CY7C424-20C	◊ Cypress (3436)	
				MT52C9010							MT52C9010-20	MicronTech (3581)	60
				883C-50	MicronTech						MT52C9012-20	MicronTech (3581)	
				KM75C02A-50	◊ Samsung								
		20	5	CY7C424-40M	◊† Cypress (3436)	15			40	5	MT52C9010-15	MicronTech (3581)	
				CY7C425-40C	◊† Cypress (3436)						MT52C9012-15	MicronTech (3581)	
				CY7C425-40M	◊† Cypress (3429)						QS7202-15	Quality Semi (3613)	
				DS2010-50	◊ Dallas						QS7212-15	Quality Semi (3613)	65
				MT52C9010									
				883C-40	MicronTech								
				KM75C102A-50	◊ Samsung	20			42	5	SMF3009	STC	
				LH5497-50	◊ Sharp (3625)				50	5	KM75C02A-20	◊ Samsung	
				V61C02-40	Vitellic (3747)						KM75C102A-20	◊ Samsung	
				V61C02-40L	Vitellic						LH5497-20	◊ Sharp	70
				VT7202-50	VLSI Tech						VT7202-20	VLSI Tech	
		22	5	QS7202-35	Quality Semi (3613)	25			66.7	5	QS8202-15	◊ Quality Semi	
				QS7212-35	Quality Semi (3613)						QS8212-15	◊ Quality Semi	
		22.2	5	MT52C9010-35	MicronTech (3581)		2K	9		5	IDT72103-120	◊† IDT	
				MT52C9012-35	MicronTech (3581)						IDT72103-50	◊† IDT	75
				MS7202-35	◊ Mosel						IDT72103-65	◊† IDT	
				KM75C02A-35	◊ Samsung						IDT72103-80	◊† IDT	
		25	5	CY7C424-30C	◊ Cypress	30					MK4503-10	SGS-Thomson	80
				CY7C424-30M	◊† Cypress (3436)						MK4503-12	SGS-Thomson	
				CY7C425-30C	◊ Cypress (3436)						MK4503-15	SGS-Thomson	
				CY7C425-30M	◊† Cypress (3436)						MK4503-20	SGS-Thomson	
				IDT7202LA-40B	◊† IDT						MK4503-65	SGS-Thomson	
				IDT7202SA-40B	◊† IDT	35					MK4503-80	SGS-Thomson	
		27	5	IDT7202LA-35	◊ IDT					5	DS2011-12	◊ Dallas	85
				IDT7202SA-35	◊ IDT						DS2011-15	◊ Dallas	
		28	5	QS7202-25	Quality Semi (3613)	40			7	5	IDT7203L-120	◊ IDT	
				QS7212-25	Quality Semi (3613)						IDT7203L-120B	◊† IDT	
		28.5	5	AM7202A-25	AMD	45					IDT7203S-120	◊ IDT	
				CY7C424-25C	◊ Cypress (3436)						IDT7203S-120B	◊† IDT	
				CY7C424-25M	◊† Cypress (3436)						QS7203-120	Quality Semi	90
				CY7C425-25C	◊ Cypress (3436)								
				DS2010-35	◊ Dallas				8	5	IDT7M203S-100B	† IDT	
				MT52C9010-25	MicronTech (3581)				10	5	IDT7203L-80	◊ IDT	
				MT52C9010							IDT7203L-80B	◊† IDT	
				833C-25	MicronTech						IDT7203S-80	◊ IDT	
				MT52C9010							IDT7203S-80B	◊† IDT	
				883C-25	MicronTech								
				MT52C9012-25	MicronTech (3581)								
				(Continued)									(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—First-in First-out (Cont'd)

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line
2K	9	10	5	MS7203-80	◊ Mosel	(Cont'd)	2K	9	28	5	QS7203-25	Quality Semi	(Cont'd)
				QS7203-80	Quality Semi								
		12	5	IDT7M203S-65	IDT	5			28.5	5	CY7C428-25C	◊ Cypress	55
				IDT7M203S-65B	† IDT						CY7C429-25C	◊ Cypress	
				IDT7203L-65	◊* IDT						CY7C439-25C	Cypress	
				IDT7203L-65B	◊*† IDT						DS2011-35	◊ Dallas	
				IDT7203S-65	◊* IDT						MT52C9020-25	MicronTech	
				IDT7203S-65B	◊*† IDT	10					MT52C9020		60
		12.5	5	CY7C428-65C	◊ Cypress						883C-25	MicronTech	
				CY7C428-65M	*† Cypress						MT52C9022-25	MicronTech	
				CY7C429-65M	*† Cypress								
				CY7C439-65C	Cypress						KM75C03A-35	◊ Samsung	
				CY7C439-65M	† Cypress	15					KM75C103A-35	◊ Samsung	65
				DS2011-80	◊ Dallas				33	5	CY7C428-20C	◊ Cypress	
				KM75C03A-80	◊ Samsung						CY7C429-25M	*† Cypress	
				KM75C103A-80	◊ Samsung						QS7203-20	Quality Semi	
		15	5	IDT7M203S-50	IDT	20			33.3	5	CY7C429-20C	◊ Cypress	70
				IDT7M203S-50B	† IDT						CY7C443-30C	† Cypress	
				IDT7203L-50	◊* IDT						CY7C443-30M	† Cypress	
				IDT7203L-50B	◊*† IDT						MT52C9020-20	MicronTech	
				IDT7203S-50	◊* IDT						MT52C9022-20	MicronTech	
				IDT7203S-50B	◊*† IDT	25			40	5	MT52C9020-15	MicronTech	75
				MS7203-50	◊ Mosel						MT52C9022-15	MicronTech	
				QS7203-50	Quality Semi						QS7203-15	Quality Semi	
		15.4	5	CY7C429-65C	◊ Cypress						QS7223-25	Quality Semi	
				DS2011-65	◊ Dallas						QS8223	◊ Quality Semi	
				MT52C9020		30					KM75C03A-25	◊ Samsung	80
				883C-50	MicronTech						KM75C103A-25	◊ Samsung	
		18	5	IDT7M203S-55B	† IDT				40/20 S/P	5	IDT72103	IDT	
				CY7C428-40C	◊ Cypress						IDT72103B	† IDT	
				CY7C428-40M	*† Cypress				50	5	CY7C443-20C	Cypress	85
				CY7C429-40M	◊*† Cypress	35					CY7C443-20M	† Cypress	
				CY7C439-40C	Cypress						QS7223-20	Quality Semi	
				CY7C439-40M	† Cypress								
				DS2011-50	◊ Dallas						KM75C03A-20	◊ Samsung	
				MT52C9020		40					KM75C103A-20	◊ Samsung	90
				883C-40	MicronTech						KM75C103A-20	◊ Samsung	
				KM75C03A-50	◊ Samsung						LH5498-20	Sharp	
				KM75C103A-50	◊ Samsung						VT7203-20	VLSI Tech	
				LH5498-50	Sharp				66.7	5	QS8203-15	◊ Quality Semi	
				VT7203-50	VLSI Tech	45			71.4	5	CY7C443-14C	Cypress	95
		22	5	QS7203-35	Quality Semi						CY7C443-14M	† Cypress	
		22.2	5	MT52C9020-35	MicronTech								
				MT52C9022-35	MicronTech								
				MS7203-35	◊ Mosel								
		25	5	CY7C428-30C	◊ Cypress	50	4K	9		5	IDT72104-120	◊† IDT	(Continued)
				CY7C428-30M	*† Cypress						IDT72104-50	◊† IDT	
				CY7C429-30C	◊ Cypress						IDT72104-65	◊† IDT	
				CY7C429-30M	*† Cypress						IDT72104-80	◊† IDT	
				CY7C429-40C	◊ Cypress						8X60	Signetics	
				CY7C439-30C	Cypress	50			7	5	IDT7204L-120	◊* IDT	(Continued)
				IDT7M203S-40	IDT						IDT7204L-120B	◊*† IDT	
				QS7223-40	Quality Semi								

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—First-in First-out (Cont'd)

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line	Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line
4K	9	7	5	IDT7204S-120	(Cont'd)		4K	9	28	5	QS7204-25	Quality Semi	
				° IDT					33	5	QS7204-20	Quality Semi	
				IDT7204S-120B							(3613)		
				°† IDT					40	5	QS7204-15	Quality Semi	
				QS7204-120	Quality Semi						(3613)		
	8		5	IDT7M204S-100							QS7224-25	Quality Semi	50
				° IDT							(3613)		
				IDT7M204S-100B		5					QS8224	° Quality Semi	
				°† IDT							LH5492	Sharp	(3625)
	10		5	IDT7204L-80					40/20 S/P	5	IDT72104	IDT	
				° IDT							IDT72104B	† IDT	
				IDT7204L-80B					50	5	QS7224-20	Quality Semi	55
				°† IDT							(3613)		
				IDT7204S-80					66.7	5	QS8204-15	° Quality Semi	
				° IDT									
				IDT7204S-80B									
				°† IDT									
				MS7204-80	° Mosel	10	8K	9	12.5	5	CYM4210-65C	Cypress	
				QS7204-80	Quality Semi						† Cypress		
	12		5	IDT7M204S-65					15.4	5	CYM4210-50C	Cypress	
				° IDT							CYM4210-50M	† Cypress	60
				IDT7M204S-65B					20	5	CYM4210-40C	Cypress	
				°† IDT							CYM4210-40M	† Cypress	
				IDT7204L-65							† Cypress		
				° IDT		15					CY7C460-40C	Cypress	
				IDT7204L-65B							CY7C460-40M	† Cypress	65
				°† IDT							CY7C470-40C	Cypress	
				IDT7204S-65					25	5	CYM4210-30C	Cypress	
				° IDT					28.5	5	CY7C460-25C	Cypress	
				IDT7204S-65B							CY7C460-25M	† Cypress	
				°† IDT							CY7C470-25C	Cypress	70
	12.5		5	CY7C432-65C	Cypress						CY7C470-25M	† Cypress	
				CY7C432-65M	† Cypress								
				CY7C433-65C	Cypress	20							
				CY7C433-65M	† Cypress								
				DS2012-80	° Dallas								
	15		5	IDT7M204S-50					28.6	5	AM7205A-35C	AMD	
				° IDT					33.3	5	CY7C460-15C	Cypress	
				IDT7M204S-50B							CY7C460-15M	† Cypress	
				°† IDT							CY7C470-15C	Cypress	75
				IDT7204L-50							CY7C470-15M	† Cypress	
				° IDT		25							
				IDT7204L-50B					40	5	Am7205A-25C	AMD	
				°† IDT					66.6	5	Am7205A-15C	AMD	
				IDT7204S-50									
				° IDT									
				IDT7204S-50B									
				°† IDT									
				MS7204-50	° Mosel		16K	9	12.5	5	CYM4220-65C	Cypress	
				QS7204-50	Quality Semi						CYM4220-65M	† Cypress	80
	15.4		5	AM7204-50	AMD				15.4	5	CYM4220-50C	Cypress	
				DS2012-65	° Dallas						CYM4220-50M	† Cypress	
	18		5	IDT7M204S-55B					20	5	CYM4220-40C	Cypress	
				°† IDT							CYM4220-40M	† Cypress	
	20		5	CY7C432-40C	Cypress						CY7C462-40C	Cypress	85
				CY7C432-40M	† Cypress						CY7C462-40M	† Cypress	
				CY7C433-40C	Cypress	35					CY7C472-40C	Cypress	
				CY7C433-40M	† Cypress						CY7C472-40M	† Cypress	
				DS2012-50	° Dallas								
	22		5	QS7204-35	Quality Semi				25	5	CYM4220-30C	Cypress	
	22.2		5	MS7204-35	° Mosel	40			28.5	5	CY7C462-25C	Cypress	
	25		5	CY7C432-30C	Cypress						CY7C462-25M	† Cypress	
				CY7C432-30M	† Cypress						CY7C472-25C	Cypress	90
				CY7C433-30C	Cypress						CY7C472-25M	† Cypress	
				CY7C433-30M	† Cypress								
				IDT7M204S-40	° IDT	45			33.3	5	CY7C462-15C	Cypress	
				QS7224-40	Quality Semi						† Cypress		95
				(3613)							CY7C472-15C	Cypress	
				(Continued)							CY7C472-15M	† Cypress	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

° Available in Surface Mount Package

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MEMORY—First-in First-out (Cont'd)

Words	Bits/ Word	Data Rate MHz (max)	Supply Voltage, V	Device	Source	Line
32K	9	20	5	CY7C464-40C	Cypress	5
				CY7C464-40M		
				† Cypress		
				CY7C474-40C	Cypress	
				CY7C474-40M		
				† Cypress		
		28.5	5	CY7C464-25C	Cypress	
				CY7C464-25M		
				† Cypress		
				CY7C474-25C	Cypress	
				CY7C474-25M		
				† Cypress		
		33.3	5	CY7C464-15C	Cypress	10
				CY7C464-15M		
				† Cypress		
				CY7C474-15C	Cypress	
				CY7C474-15M		
				† Cypress		
64K	RAM Controller			674219	AMD	15
		9	5	CYM4241-100C	Cypress	
		7.5	5	CYM4241-85C	Cypress	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—ROMs

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose												
64		Sequential					5	8		S2100	Seiko Instr	
256x4	1.8 μ sR	CMOS					3-15	16		MCM14524A MCM14524C	Motorola Motorola	
256x8	725	PMOS					± 12	24		NCM4230Z	NCM	
512x8	1.5	GaAs					5			14GM048	TriQuint	5
	70	NMOS					5	24		82HM141C	Harris	
	90	NMOS					5	24		82HM141M	Harris	
	500	CMOS					10	24		CDP1831	Harris	10
										CDP1832	Harris	
										HB1831	Hughes	
										HB1832	Hughes	
										HC1831	Hughes	
										HC1832	Hughes	
	1000	CMOS					5	24		CDP1832C	Harris	15
										HB1831C	Hughes	
										HB1832C	Hughes	
										HC1831C	Hughes	
										HC1832C	Hughes	
1Kx4	60	NMOS					5	24		82HM137C	Harris	20
	80	NMOS					5	24		82HM137M	Harris	
1Kx8	350	NMOS					5	24		SMJ2708-35	TI	
	350 ns *	CMOS					10	24		CDP1833	Harris	
										CDP1834	Harris	
										HB1833	Hughes	
										HB1834	Hughes	
										HC1833	Hughes	25
										HC1834	Hughes	
	850 ns *	CMOS					5	24		CDP1833C	Harris	
										CDP1834C	Harris	
		NMOS					5	24		HB1833C	Hughes	30
										HB1834C	Hughes	
										HC1833C	Hughes	
										HC1834C	Hughes	
2Kx4	60	NMOS					5	24		82HM185C	Harris	
2Kx8	—	Emulator (RAM w/Bat.)								GR2516	Greenwich	35
	45	CMOS					5	24		HC6616	o Honeywell	
	80	NMOS					5	24		82HM191C	Harris	
	100	NMOS					5	24		82HM191M	Harris	
	110	CMOS					5	24		HC6616/SHZC	o Honeywell	
										HC6616SHZC	o Honeywell	40
	150	NMOS					5	24		2616A-15	Signetics	
	200	CMOS					5	28		μPD23C1000A	NEC (3592)	
		NMOS					5	24		2616A-20	Signetics	
	250	NMOS					5	24		2616A-25	Signetics	
	300	CMOS					5	24		CDP1835C	Harris	45
		NMOS					5	24		2616-30	Signetics	
										2616A-30	Signetics	
	900	CMOS					5	24		HB23C16	o Hughes	
										HC23C16	Hughes	
4Kx4	45	TTL					5	20		MB7134H	Fujitsu	50
4Kx8	—	Emulator (RAM w/Bat.)								GR2532	Greenwich	
	65	TTL					5	24		MB7142E-W	o Fujitsu	
	150	CMOS					5	24		BCM23C32-3	Allegro Micro	
										BCM23C33-3	Allegro Micro	
		NMOS					5	24		2332-15	Signetics	55
										2632A-15	Signetics	
										TMS2332-15	TI	
										TMS \sqrt 732-15	TI	
	200	CMOS					5	24		BCM23C32-4	Allegro Micro	60
										BCM23C33-4	Allegro Micro	
		NMOS					5	24		2332	Commodore	
										R2332A-2	Rockwell	
										2332-20	Signetics	
										2632A-20	Signetics	
										TMS2332-20	TI	65
										TMS4732-20	TI	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

o Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose										(Cont'd)		
4Kx8	250	NMOS					5	24		R2332A-25 2332-25 2632A-25 TMS2332-25 TMS4732-25 UM2300 UM2332 VT2332-25 VT2333-25	Rockwell Signetics Signetics TI TI UMC UMC VLSI Tech VLSI Tech	(Cont'd)
												5
	300	CMOS					5	24		BCM23C32 BCM23C33 SCM23C32M SCM23C33M 883C23C32 883C23C33	Allegro Micro Allegro Micro Allegro Micro Allegro Micro Allegro Micro Allegro Micro	10
		NMOS					5	24		R2332A-3 2332-30 2632A-30 2632AE-30 VT2332-30 VT2333-30	Rockwell Signetics Signetics Signetics VLSI Tech VLSI Tech	15
	350	CMOS					4-6.5	24		CDM5332 CDM5333	Harris Harris	20
		NMOS								TMM2332	Toshiba	
	450	CMOS					5	24		H1837 TC5332 TC5333 TC5334 TC5335	Hughes Toshiba Toshiba Toshiba Toshiba	25
		NMOS					5	24		R2332A-45 VT2332-45 VT2333-45	Rockwell VLSI Tech VLSI Tech	30
	500 μ sF	CMOS					4-6.5	24		CDP1837C	Harris	
	750	CMOS					5	24		HB23C32 HC23C32	Hughes Hughes	35
6144x8	3100	NMOS					5	16		ICS1231	IntCirSys	
8Kx4x2	450	NMOS					5	24		2364B 26S64	SGS-Thomson SGS-Thomson	
8Kx8	—	Emulator (RAM w/Bat.)								GR2364	Greenwich	
	30	CMOS					5	36		HC6664	Honeywell	40
	35	CMOS					5	28		HB12C64 HC12C64	Hughes Hughes	
	55	CMOS					5	36		HC6664/1SHZC HC6664/1SHZC	Honeywell Honeywell	
	70	CMOS					5	28		UT6764-70	UTMC	45
	100	CMOS					5	24		UM23C64-10 IMP23064	UMC IMP	
	110	NMOS					-0.5 to 7	28		UM23C64-12	UMC	
	120	CMOS					5	24		BCM23C64-3 BCM23C65-3	Allegro Micro Allegro Micro	50
	150	CMOS					5	24		VC23C64-15 VC23C64M-15	Micro-Comp Micro-Comp	
										μ PD23C64E-1 R23C64-15	NEC Rockwell	
								24		UM23C64-15	UMC	55
								28		UM2310	UMC	
		NMOS					5	24		2364-15 2664A-15	Signetics Signetics	
								20		2665-15	Signetics	60
								24		TMS4764-15 VT2364-15	TI VLSI Tech	
								28		VT2365-15 VT2366-15 VT2369-15	VLSI Tech VLSI Tech VLSI Tech	
		TTL					5	28		LC3764	Sanyo	65

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose										(Cont'd)		
8Kx8	200	CMOS					5	24		BCM23C64-4	Allegro Micro	5
								28		BCM23C65-4	Allegro Micro	
										HN61364H-20	Hitachi	
										μPD23C64E	NEC	
		Mask ROM					5	28		LH2369	Sharp (3624)	10
		NMOS					5	24		S68C364-200	Gould AMI	
								28		MSM3864	OKI	
								24		R2364A-2	Rockwell	
								28		R2364B-2	Rockwell	
								24		R2365	Rockwell	
								28		2364-20	Signetics	
								24		2664-20	Signetics	
										2664A-20	Signetics	
								20		2665-20	Signetics	15
								24		TMS4764-20	TI	
								28		TMM2365	Toshiba	
								24		TMM2366	Toshiba	
								28		VT2365-20	VLSI Tech	
										VT2366-20	VLSI Tech	
										VT2369-20	VLSI Tech	20
250	CMOS						5	24		CDM5364	Harris	25
								28		CDM5365	Harris	
								24		HN61364	Hitachi	
										HN61365	Hitachi	
								28		HN61366	Hitachi	
										R23C64-25	Rockwell	30
										SMM6365	S-MOS	
										TC5364	Toshiba	
										TC5365	Toshiba	
										TC5366	Toshiba	
		Mask ROM					5	28		LH2367	Sharp	35
		NMOS					5	28		2364	Commodore	
								24		S68B364	Gould AMI	
										S68B364-250	Gould AMI	
										S681364-250	Gould AMI	
										R2364A-25	Rockwell	
								28		R2364B-25	Rockwell	40
								24		M36000	SGS-Thomson	
								28		2364-25	Signetics	
								24		2664-25	Signetics	
										2664A-25	Signetics	
								20		2665-25	Signetics	45
								24		TMS4764-25	TI	
								28		TMM2364	Toshiba	
								24		VT2364-25	VLSI Tech	
								28		VT2369-25	VLSI Tech	
300	CMOS						5	24		BCM23C64	Allegro Micro	50
								28		BCM23C65M	Allegro Micro	
								24		SCM23C64M	Allegro Micro	
										883C23C64	Allegro Micro	
								28		883C23C65	Allegro Micro	
										HB23C65	Hughes	
								24		HC23C64C	Hughes	55
								28		HC23C65	Hughes	
										R23C64-3	Rockwell	
										23SC64A	Supertex	
		NMOS					5	24		S68M364-300	Gould AMI	60
										R2364A-3	Rockwell	
								28		R2364B-3	Rockwell	
								24		M37000	SGS-Thomson	
										2664A-30	Signetics	65
										2664AE-30	Signetics	
								20		2665-30	Signetics	
								24		VT2364-30	VLSI Tech	
								28		VT2365-30	VLSI Tech	
										VT2366-30	VLSI Tech	
										VT2369-30	VLSI Tech	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose											(Cont'd)	
8Kx8	300 ns *	NMOS					5	28		2364-30	Signetics	5
	350	CMOS					5	28		R23C64-35	Rockwell	
								24		SMM2364	S-MOS	
								28		SMM2365	S-MOS	
		NMOS					5	28		VT2369-35	VLSI Tech	
12Kx10	150	CMOS					5	28		SCM23C120	Allegro Micro	10
	300	NMOS					5	28		VT23121	VLSI Tech	
										BCM23C128-1	Allegro Micro	
										IMP23128	IMP	
										BCM23C128-2	Allegro Micro	
16Kx8	100	CMOS					5	28		RP23C128H	Ricoh	15
	110	NMOS					-0.5 to 7	28		RP23C129H	Ricoh	
	120	CMOS					5	28				
										BCM23C128-3	Allegro Micro	
										BCM23C128M	Allegro Micro	
										VC23C128-15	Micro-Comp	20
										VC23C128M-15	Micro-Comp	
										MS310128-15	Mosel	
										μPD23C128E-1	NEC	
										R23C128	Rockwell	
										UM23C128-A/B	UMC	25
										UM23C128-15	UMC	
		NMOS					5	28		23X128-15	Signetics	
										23128A-15	Signetics	
										VT23128-15	VLSI Tech	
										VT23129-15	VLSI Tech	30
	200	CMOS					5	28		HN613128H-20	Hitachi	
										μPD23C128E	NEC	
										RP23C128E	Ricoh	
										RP23C129E	Ricoh	
		NMOS					5	28		XLS23128-200	EXEL	35
										23X128-20	Signetics	
										23128-20	Signetics	
										23128A-20	Signetics	
										TMS27128-20	TI	
										TMS47128-20 *	TI	40
										TMM23128	Toshiba	
										VT23128-20	VLSI Tech	
										VT23129-20	VLSI Tech	
	250	CMOS					5	28		24C128	Commodore	
										CDM53128	Harris	45
										HN613128	Hitachi	
										RP23C128D	Ricoh	
										RP23C129D	Ricoh	
										SMM6313-25	S-MOS	
		Mask ROM					5	28		LH23126	Sharp (3624)	50
		NMOS					5	28		23128	Commodore	
										S23128B	Gould AMI	
										MSM38128A	OKI	
										R23128-25	Rockwell	
										23X128-25	Signetics	55
										23X128A-25	Signetics	
										23128-25	Signetics	
										TMS27128-25	TI	
										TMS47128-25 *	TI	
										VT23128-25	VLSI Tech	60
										VT23129-25	VLSI Tech	
										VT23131	VLSI Tech	
										VT23131-25	VLSI Tech	
	300	NMOS					5	28		XLS23129-300	EXEL	
										S23128I-300	Gould AMI	65
										S23128M-300 *	Gould AMI	
										R23128-3	Rockwell	
										23X128-30	Signetics	
										23X128A-30	Signetics	
										23128-30	Signetics	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

* Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose										(Cont'd)		
16Kx8	300	NMOS					5	28		TMS27128-30 VT23131-30	Ti VLSI Tech	
	350	NMOS					5	28		S23128A TMS47128-35 *	Gould AMI Ti	
	450	NMOS					5	28		MSM38128 23128-45 TMS27128-45 VT23128-45 VT23129-45 VT23131-45	OKI Signetics Ti VLSI Tech VLSI Tech VLSI Tech	5
32Kx8	25	BiCMOS					5	28		MBM71C256	Fujitsu	
	100	CMOS					5	28		BCM23C256-1	Allegro Micro	
	110	NMOS					-0.5 to 7	28		IMP23256	IMP	
	120	CMOS					5	28		BCM23C256-2 KM23C256	Allegro Micro Samsung	15
	150	CMOS					5	28		BCM23C256-3 SCM23C256M S63256D-150 VC23C256-15 VC23C256M-15	Allegro Micro Allegro Micro Gould AMI Micro-Comp Micro-Comp	20
										MS310256-15 NCR23C256-15 LH53259	Mosel NCR Sharp	
		NMOS					5	28		TMM23256	Toshiba	
		TTL					5	28		LC37256	Sanyo	25
	175	CMOS					5	28		S63256I-175 S63256M-200	Gould AMI Gould AMI	
	200	CMOS					5	28		HN613256H-20 MSM53256 RP23C256E RP23C257E TC53257	Hitachi OKI Ricoh Ricoh Toshiba	30
		NMOS					5	28		XLS23258-200 MSM38256A RP23256E RP23257E MK38000-20 LH23259	EXEL OKI Ricoh Ricoh SGS-Thomson Sharp (3624)	35
										23256A-20 TMS47256-20 VT23256-20 VT23257-20	Signetics Ti VLSI Tech VLSI Tech	40
	250	CMOS					5	28		24C256 CDM53256 HN613256 RP23C256D RP23C257D SMM6325 SMM6326 LH53257	Commodore Harris Hitachi Ricoh Ricoh S-MOS S-MOS Sharp	45
		Mask ROM					5	28		LH23257	Sharp	
		NMOS					5	28		24256 MSM38256 RP23256D RP23257D MK38000-25 23256A-25 TMS47256-25 VT23256-25 VT23257-25	Commodore OKI Ricoh Ricoh SGS-Thomson Signetics Ti VLSI Tech VLSI Tech	55
	300	NMOS					5	28		XLS23257-300 23256A-30	EXEL Signetics	60
	350	NMOS					5	28		TMS47256-35	Ti	
	450	CMOS					5	28		SMM2325 SMM2326	S-MOS S-MOS	65
		NMOS					5	28		XLS23256-450 XLS23258-450	EXEL EXEL	

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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose										(Cont'd)		
32Kx8	450	NMOS					5	28		VT23256-45 VT23257-45	VLSI Tech VLSI Tech	
64Kx8	110	NMOS				-0.5 to 7	28			IMP23512	IMP	5
	120	CMOS				5	28			KM23C512	Samsung	
	150	CMOS				5	28			MB83512-15	Fujitsu	
										S63512D-150	Gould AMI	
										VC23C512-15	Micro-Comp	
										VC23C512M-15	Micro-Comp	
										MS310512-15	Mosel	10
										UM23C512-15	UMC	
	200	CMOS					5	28		S63512C-200	Gould AMI	
										NCR23C512-20	NCR	
										LH53514	Sharp	
		NMOS				5	28			LH23512	Sharp (3624)	
	250	NMOS				5	28			24512	Commodore	15
										RP23512D	Ricoh	
	300	CMOS					5	28		TMS47C522-30	TI	
		NMOS					5	28		RP23512B	Ricoh	
										VT23512-30	VLSI Tech	
	350	NMOS					5	28		VT23512-35	VLSI Tech	20
	450	NMOS					5	28		VT23512-45	VLSI Tech	
64Kx16	120	CMOS					5	40		TC531024-12	Toshiba	
	150	CMOS					5	40		TC531024-15	Toshiba	
	200	CMOS					5	40		μPD23C1024E	NEC (3592)	
128Kx1	250	CMOS					5	28		MSM531000	OKI	25
128Kx8	100	CMOS					5	28		SMM4310	S-MOS	
								32		UM23C1025-10	UMC	
	110	NMOS				-0.5 to 7	28			IMP23100	IMP	
								32		IMP23101	IMP	
	120	CMOS					5	28		KM23C1000	Samsung	30
								32		TC531000C-12	Toshiba	
										TC531001C-12	Toshiba	
										UM23C1025-12	UMC	
	150	CMOS					5	28		MB831000	Fujitsu	35
										MB831000-15	Fujitsu	
										S631000	Gould AMI	
								32		VC23C1025-15	Micro-Comp	
								28		MS311024-15	Mosel	
								40		KM23C21000	Samsung	
								32		LH530800	Sharp (3624)	40
										LH530900	Sharp	
								28		LH531000A	Sharp	
										TC531000C-15	Toshiba	
								32		TC531001C-15	Toshiba	45
								28		UM23C1024-15	UMC	
								32		UM23C1025-15	UMC	
								28		VT23C1024	VLSI Tech	
										VT23C1024-15	VLSI Tech	
	175	NMOS					5	28		VT231024-17	VLSI Tech	50
	200	CMOS					5	28		MB831000-20	Fujitsu	
								32		S631001	Gould AMI	
								20		VC23C1024-20	Micro-Comp	
								28		MS311024-20	Mosel	
										NCR23C1000-20	NCR	
										μPD23C1000A	NEC (3592)	55
								32		μPD23C1000EA	NEC (3592)	
										μPD23C1001E	NEC (3592)	
								28		μPD23C1010A	NEC (3592)	
							5	28		TC531000	Toshiba	60
										UM23C1024-20	UMC	
										VT23C1024-20	VLSI Tech	
		TTL		0.1	40		5	28		S201000	Seiko Instr	
		NMOS					5	28		GM231000-20	GoldStar	
										GM231024-20	GoldStar	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Mask Programmable—General Purpose										(Cont'd)			
128Kx8	200	NMOS					5	32		LH231100	Sharp (3624)	5	
		TTL					5	28		LC371000	Sanyo		
	250	CMOS					5	28		HN62301S-25	Hitachi	10	
		Mask ROM					5	28		LH231000	Sharp		
										LH531000	Sharp		
	270	NMOS					5	28		GM231000-25	GoldStar	15	
										GM231024-25	GoldStar		
										RP231024D	Ricoh		
	300	CMOS					5	28		LH531100	Sharp	20	
							5	28		MB831124-35	Fujitsu		
					5	28		VT23C1024-30	VLSI Tech				
128Kx16	175	CMOS					5	40		μPD23C2000A-1	NEC	25	
							5	40		HN62402-20	Hitachi		
	200	CMOS								μPD23C2000A	NEC (3592)	30	
										LH532000A	Sharp		
										μPD23C2000	NEC (3592)		
	250	CMOS					5	40		YM90242D	Yamaha	35	
		Mask					5	40					
	256Kx8	110	NMOS					-0.5 to 7	32		IMP23200	IMP	40
			CMOS					5	32		VC23C2001-12	Micro-Comp	
120										UM23C2001-12	UMC	45	
										S632000-15	Gould AMI		
										KM23C2000	Samsung		
150		CMOS					5	32		KM23C41000	Samsung	50	
										LH532300	Sharp		
										LH532400	Sharp		
256Kx16		175	CMOS					5	40		UM23C2001-15	UMC	55
											TC532000-150	Toshiba	
	200	CMOS					5	40		μPD23C2000A-1	NEC	60	
							12.5	32		MB832000	Fujitsu		
							5	32		S632000-20	Gould AMI		
	250	CMOS								S632000-200	Gould AMI	65	
										HN62302-20	Hitachi		
							5	32		VC23C2001-20	Micro-Comp		
	270						5	32		MS312002	Mosel	70	
								40		μPD23C2000A	NEC (3592)		
								LH532000A	Sharp				
256Kx8/128Kx16	175	CMOS								LH532100A	Sharp (3624)	75	
										LH532200A	Sharp (3624)		
	200									S202000	Seiko Instr	80	
										μPD23C2001	NEC (3592)		
							5	40		LH532000	Sharp		
	250	CMOS					5	32		LH532100	Sharp (3624)	85	
		NMOS					5	40		LH534000	Sharp (3624)		
	150	Mask					5	32		TM90212D	Yamaha	90	
256Kx16	100	CMOS		0.1	55		5	40		LH532200	Sharp (3624)	95	
	120	CMOS					5	40		HY23C4016-100	Hyundai	100	
							5	40		M5M27C402	Mitsubishi		
							5	40		MB834200B	Fujitsu		
	150	CMOS		0.1	55		5	40		HY23C4016-150	Hyundai	105	
	200	CMOS					5	40		MB834200	Fujitsu	110	
										VC23C4000-20	Micro-Comp		
								MS314003	Mosel				
256Kx8	100	CMOS					5	40		μPD23C4000A	NEC	115	
										LH534000A	Sharp (3624)		
	150						5	40		μPD23C4000	NEC (3592)	120	
							5	40		YM90442D	Yamaha		
							12.5	40		MB834100	Fujitsu		
	250											125	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—ROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Mask Programmable—General Purpose (Cont'd)												
512Kx8	100	CMOS		0.1	55		5	32		HY23C4008-100	Hyundai	5
	110	NMOS					-0.5 to 7	32		IMP23400	IMP	
	120	CMOS					5	32		M5M27C401	Mitsubishi	
	150	CMOS					5	32		MB834000B	Fujitsu	
										GM23C4000-15	GoldStar	
										S634000-150	Gould AMI	10
										KM23C4000	Samsung	
								44		KM23C81000	Samsung	
								32		TC534000A-15	Toshiba	
								40		UM23C4000-15	UMC	
				0.1	55		5	32		HY23C4008-150	Hyundai	15
200	CMOS						5	32		MB834000	Fujitsu	
										GM23C4000-20	GoldStar	
										S634000-200	Gould AMI	
										VC23C4001-20	Micro-Comp	
								40		MS314002	Mosel	20
										MS314003	Mosel	
										μPD23C4000A	NEC	
										LH534000A	Sharp (3624)	
								32		LH534100A	Sharp (3624)	
										LH534200A	Sharp (3624)	25
								40		UM23C4000-20	UMC	
								32		UM23C4001	UMC	
		TTL		0.1	50		5	32		S204000	Seiko Instr	
250	CMOS						5	32		GM23C4000-25	GoldStar	
								40		μPD23C4000	NEC	30
								32		μPD23C4001E	NEC (3592)	
										LH534100	Sharp (3624)	
										LH534200	Sharp (3624)	
										TC534000	Toshiba	
150	Mask						5	32		YM90412D	Yamaha	35
512Kx8/256Kx16	150	CMOS	TTL/CMOS	0.02	50		5	40		TC534200-150	Toshiba	
512Kx16	200	CMOS					5	42		MS318003	Mosel	
										LH538000	Sharp	
	250	CMOS					5	42		μPD23C8000	NEC (3592)	
1Mx8	150	CMOS					5	42		KM23C8000	Samsung	40
	200	CMOS					5	32		MB838000	Fujitsu	
										MS318002	Mosel	
								42		LH538000	Sharp	
			TTL/CMOS	0.1	40		5	32		TC538000-200	Toshiba	
	250	CMOS					5	42		μPD23C8000	NEC (3592)	45
								32		μPD23C8001E	NEC (3592)	
1Mx8/512Kx16	200	CMOS	TTL/CMOS	0.1	50		5	42		TC538200-200	Toshiba	
1Mx16	150	CMOS					5	44		MB831620	Fujitsu	
	200	CMOS					5	128		LH5316000	Sharp	
	250	CMOS					5	42		μPD23C16000	NEC (3592)	50
2Mx8	200	CMOS					5	128		LH5316000	Sharp	
	250	CMOS					5	42		μPD23C16000	NEC (3592)	
2Mx8/1Mx16	50	CMOS	TTL/CMOS	0.1	60		5	42		TC5316200A-150	Toshiba	
	200	CMOS	TTL/CMOS	0.1	50		5	42		TC5316200-200	Toshiba (3725)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose												
16x4	35	TTL					5	16		DM85S06 DM85S07	National National	
32x8	10	TTL					5	16, 20		N82US123 N82US23	* Signetics * Signetics	
	15	TTL					5	16		PL77X288B PL87X288B	National National	5
	20	TTL					5	16		MB7112Y MB7111H	Fujitsu Fujitsu	
	25	TTL					5	16		MB7112H MCM27S19 DM74S188A DM74S288A	Fujitsu Motorola * National * National	10
								16, 20		N82S123A N82S23A	* Signetics * Signetics	
	30	TTL					5	16		38S03X-30	TI	15
	35	TTL					5	16		MB7111E MB7112E MB7112E-W DM54S188A DM54S288A DM74S188 DM74S288	Fujitsu Fujitsu Fujitsu * National * National * National * National	20
	45	TTL					5	16		DM54S188 DM54S288	* National * National	
	50	TTL					5	16		AM27LS19-55C MB7111L MB7112L HL7602-2 HL7602-5 HL7602-8 HL7603-2 HL7603-5 HL7603-8 N82S123 N82S23 SN54188A	AMD Fujitsu Fujitsu Lansdale Lansdale Lansdale Lansdale Lansdale Lansdale Lansdale * Signetics * Signetics TI	25
	65	TTL					5	16		AM27LS19-70M S82S123 S82S23	AMD * Signetics * Signetics	
256x4	10	ECL					5	16		100149A 10149A	* Signetics * Signetics	40
	11 ns*	ECL					-5.2	16		F10416C	National	
	20	ECL					-5.2	16		100149 10149	* Signetics * Signetics	
	27	TTL					5	16, 20		N82S129A MB7113H MB7114H	* Signetics Fujitsu Fujitsu	45
	30	TTL					5	16		MB7113E MB7114E MB7114E-W	Fujitsu Fujitsu Fujitsu	50
	45	TTL					5	16		AM27S21C MB7113L MB7114L DM74S287 DM74S387 N82S126 N82S129	* AMD Fujitsu Fujitsu National * National * Signetics * Signetics	55
	50	TTL					5	16		AM27S21M DM54S287 DM54S387	* AMD National * National	60
	70	TTL					5	16		S82S126 S82S129	* Signetics * Signetics	
	30	TTL					5	16		N82S126A	* Signetics	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose											(Cont'd)	
256x8	28	TTL				5	20			63S281A	AMD	
	35	TTL				5	20			MB7117H	Fujitsu	
										MB7118H	Fujitsu	
								16		HL7610B-2	Lansdale	
										(3549)		
										HL7610B-5	Lansdale	
										(3549)		5
										HL7610B-8	Lansdale	
										(3549)		
										HL7611B-2	Lansdale	
45		TTL				5	20			HL7611B-5	Lansdale	
										(3549)		
										HL7611B-8	Lansdale	
										(3549)		
										HS7610B-5	Lansdale	
												10
										63S281	AMD	
										MB7117E	Fujitsu	
										MB7118E	Fujitsu	
								16		HL7610A-2	Lansdale	
60										(3549)		
										HL7610A-5	Lansdale	
										(3549)		15
										HL7611A-2	Lansdale	
										(3549)		
										HL7611A-5	Lansdale	
										(3549)		
										HL7611A-8	Lansdale	
										(3549)		
										HS7610A-8	Lansdale	
70								20		N82S135	* Signetics	20
										HL7610-2	Lansdale	
										(3549)		
										HL7610-5	Lansdale	
										(3549)		
										HL7610-8	Lansdale	
										(3549)		
										HL7611-2	Lansdale	
										(3549)		
										HL7611-5	Lansdale	
100										(3549)		25
										HL7611-8	Lansdale	
										(3549)		
								20		DM74LS471	* National	
										DM54LS471	* National	
										N82LS135	* Signetics	
512x4	30	TTL				5	16, 20			N82S131A	* Signetics	30
	33	TTL				5	16, 20			N82S130A	* Signetics	
	35	TTL				5	16			MB7115H	Fujitsu	
										MB7116H	Fujitsu	
										HL7620B-2	Lansdale	
										(3549)		
										HL7620B-5	Lansdale	
										(3549)		35
										HL7620B-8	Lansdale	
										(3549)		
40										HL7621B-2	Lansdale	
										(3549)		
										HL7621B-5	Lansdale	
										(3549)		
										HL7621B-8	Lansdale	
										(3549)		
										MB7115E	Fujitsu	
										MB7116E	Fujitsu	
										MB7116E-W	* Fujitsu	
										HL7620A-2	Lansdale	
45										(3549)		
										HL7620A-5	Lansdale	
										(3549)		
										HL7620A-8	Lansdale	
										(3549)		45
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
512x4	50	TTL					5	16		(Cont'd)		
										HL7621A-2	Lansdale (3549)	5
										HL7621A-5	Lansdale (3549)	
										HL7621A-8	Lansdale (3549)	
										MCM7621A	Motorola	
										24		
										MCM7641A	Motorola	10
										N82S130	* Signetics	
										N82S131	* Signetics	15
	55	TTL					5	16		DM74S570	National	
										DM74S570A	National	
										DM74S571	National	
										DM74S571A	National	
										DM74S571B	National	
512x8	65	TTL					5	16		DM54S570	National	20
										DM54S570A	National	
										DM54S571	National	
										DM54S571A	National	
										DM54S571B	National	
	70	TTL					5	16		HL7620-2	Lansdale (3549)	25
										HL7620-5	Lansdale (3549)	
										HL7620-8	Lansdale (3549)	
										HL7621-2	Lansdale (3549)	
										HL7621-5	Lansdale (3549)	
512x8	20	TTL					+ 5	24		HL7621-8	Lansdale (3549)	30
										MCM7621	Motorola	
										S82S130	* Signetics	
										S82S131	* Signetics	
	25	CMOS Reg					5	24		MB7226-RA-20	Fujitsu	35
										MB7226RA-20	Fujitsu	
										MB7226RS-20	Fujitsu	
										CY7C225-25C	* Cypress	
										CY7C225-30M	* Cypress	
512x8	27	Reg					5	24		24		40
										MB7226RA-25	Fujitsu	
										MB7226RS-25	Fujitsu	
										20		
										N82S147B	* Signetics	
	30	Reg					5	24		AM27S25C	* AMD	45
										AM27S25M	* AMD	
										CY7C225-30C	* Cypress	
										CY7C225-35M	* Cypress	
										DM87SR27B	National	
512x8	35	Reg					5	24		DM87SR476B	* National	50
										22		
										24		
										MB7123H	Fujitsu	
										MB7124H	Fujitsu	
	40	CMOS Reg					5	24		24		55
										20		
										24		
										MCM27S31A	Motorola	
										DM74S472B	* National	
512x8	45	TTL					5	20		DM87SR474	* National	55
										DM77SR476	* National	
										DM77SR476	* National	
										CY7C225-40C	* Cypress	
										CY7C225-40M	* Cypress	
	50	TTL					5	24		DM77SR474	National	
										DM77SR476	* National	
										MB7123E	Fujitsu	
										MB7124E	Fujitsu	
										24		
512x8	55	TTL					5	20		HL7640A-2	Lansdale (3549)	55
										HL7640A-5	Lansdale (3549)	
										HL7640A-8	Lansdale (3549)	
												(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
512x8	45	TTL					5	24		HL7641A-2	Lansdale (3549)	5
										HL7641A-5	Lansdale (3549)	
										HL7641A-8	Lansdale (3549)	
										HL7649A-2	Lansdale (3549)	
										HL7649A-5	Lansdale (3549)	
										HL7649A-8	Lansdale (3549)	
										MCM7649A	Motorola	
										DM74S472A	* National	
										DM74S472B	* National	
50	Reg TTL						5	22		DM87SR27	National	15
										R29621AC	Raytheon	
										R29623AC	Raytheon	
										HL7649-2	Lansdale (3549)	
										HL7649-5	Lansdale (3549)	
										HL7649-8	Lansdale (3549)	
										MCM7649	Motorola	
										DM54Q474A	National	
										DM54S472	* National	
60	TTL						5	20		DM54S472A	* National	20
										DM54S472B	* National	
										DM54S473A	* National	
										DM54S473B	* National	
										DM54S474B	National	
										DM54S475A	National	
										DM74S472	* National	
										DM74S473	* National	
										R29621AM	Raytheon	
65	TTL						5	20		R29623AM	Raytheon	30
										N82S115	* Signetics	
										N82S141	Signetics	
										DM54S473	* National	
										DM54S475	National	
										DM74S474	National	
										DM74S475	National	
70	TTL						5	24		HL7640-2	Lansdale (3549)	40
										HL7640-5	Lansdale (3549)	
										HL7640-8	Lansdale (3549)	
										HL7641-2	Lansdale (3549)	
										HL7641-5	Lansdale (3549)	
										HL7641-8	Lansdale (3549)	
										MCM7641	Motorola	
										DM54S474	National	
										29623	Raytheon	
90 120 200	TTL CMOS CMOS						5	24		TBP28S42M	TI	45
										S82S141	Signetics	
										HM6642B-9	Harris	
										HM6642B/883	Harris	
										HM6642	Harris	
										HM6642-9	Harris	
										HM6642/883	Harris	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

• Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
512x8	250	CMOS				5	24			HM6641-9 HM6641/883	Harris	
		CMOS-RH				5	24			HS6641RH	Harris	
1Kx1	20	TTL				5	16			93425H-20	National	
1Kx4	35	TTL				5	18			AM27S33AC MB7121H MB7122H DM74S573B μPB426-3 N82S137B	* AMD Fujitsu Fujitsu National NEC * Signetics	5
	45	TTL				5	18			AM27S33AM MB7121E MB7122E MB7122E-W HL7642B-2 HL7642B-5 HL7642B-8 HL7643B-2 HL7643B-5 HL7643B-8 DM74S572A DM74S573A	* AMD Fujitsu Fujitsu Fujitsu Lansdale Lansdale Lansdale Lansdale Lansdale Lansdale National National	10
							24 18, 20 24			DM87S181A N82S137A N82S141A	National * Signetics Signetics	15
	50	TTL				5	18			HL7642A-2 HL7642A-5 HL7642A-8 HL7643A-2 HL7643A-5 HL7643A-8 MCM7643A DM54S573B μPB426-2	Lansdale Lansdale Lansdale Lansdale Lansdale Lansdale Motorola National NEC	20
	55	TTL				5	18			AM27S33C	* AMD	25
	60	TTL				5	18			HL7642-2 HL7642-5 HL7642-8 HL7643-2 HL7643-5 HL7643-8 DM54S572A DM54S573A DM74S572 DM74S573 μPB426-1 N82S137	Lansdale Lansdale Lansdale Lansdale Lansdale Lansdale National National National National NEC * Signetics	30
	65	TTL				5	18			AM27S33M DM77S181A	* AMD National	35
	70	TTL				5	18			MCM7643 μPB426 S82S137A	Motorola NEC * Signetics	40
											(Continued)	45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Fuse Programmable—General Purpose											(Cont'd)		
1Kx4	75	TTL					5	18		DM54S572 DM54S573	National National	(Cont'd)	
	80	TTL					5	18		S82S137	* Signetics		
1Kx8	—	TTL					5	24		AM27PS181 AM27S35AC AM27S35AM AM27S35C AM27S35M AM27S37A	AMD * AMD * AMD * AMD * AMD * AMD	5	
	20	TTL					+ 5 5	24 24		MB7232-RA-20 MB7232RA-20 MB7232RS-20	Fujitsu Fujitsu Fujitsu	10	
	25	CMOS Reg. TTL					5 5	24 24		CY7C235-25C MB7232RA-25 MB7232RS-25	* Cypress Fujitsu Fujitsu	15	
	30	CMOS Reg					5 5	24 24		CY7C235-30M CY7C281-30C CY7C282-30C CY7C235-30C	* Cypress * Cypress * Cypress * Cypress	20	
	35	CMOS Reg. Reg					5 5	24 24		CY7C235-35M MCM27S35A MCM27S37A DM87SR183B	* Cypress * Motorola Motorola National	25	
		TTL					5	24		AM27S37 MB7132Y MCM27S181 93Z451A	* AMD Fujitsu Motorola National	30	
	40	CMOS Reg					5 5	28 24		N82S181C N82S191C CY7C235-40C CY7C235-40M DM77SR181 DM87SR181 DM87SR183	* Signetics * Signetics * Cypress * Cypress National National National	35	
		TTL					5	24		93Z451C	National	40	
	45	CMOS Reg TTL					5 5	24 24		CY7C281-45C CY7C281-45M CY7C282-45C CY7C282-45M DM77SR183 MB7132H 93Z451 N82HS187A N82HS189A N82S181B	* Cypress * Cypress * Cypress * Cypress National Fujitsu National * Signetics * Signetics * Signetics	45	
	50	TTL					5	24		82HS181 HL7681A-2 HL7681A-5 HL7681A-8 MCM7681A R29631AC R29633AC	Intel Lansdale Lansdale Lansdale Motorola Raytheon Raytheon	(3549) (3549) (3549) (3549)	50
	55	TTL					5	24		MB7132E MB7132E-W 82S181 DM87S180 DM87S280 DM87S281 93Z451M N82HS187 N82HS189 N82S181A	Fujitsu Fujitsu Intel National National National National * Signetics * Signetics * Signetics		55
	60	TTL					5	24		R29631AM 29631A	* Raytheon Raytheon	(Continued)	60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◇ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
1Kx8	60	TTL					5	24		29631A Raytheon 29633A ♦ Raytheon 29633A Raytheon N82S183 * Signetics	(Cont'd)	
	70	TTL					5	24		HL7681-2 Lansdale (3549) HL7681-5 Lansdale (3549) HL7681-8 Lansdale (3549) MCM7681 Motorola DM87S181 National 29633A ♦ Raytheon 29633A Raytheon N82S180 Signetics N82S181 * Signetics		5
	75	TTL					5	24		DM77S180 National DM77S181 National DM77S280 National DM77S281 National		10
	80	TTL					5	24		S82S181A * Signetics S82S181 * Signetics S82S183 * Signetics S82S2708 Signetics		15
	90	TTL					5	24				20
	95	TTL					5	24		29633C Raytheon N82LS181 Signetics S82LS181 Signetics		
	120	TTL					5	24				
	175	TTL					5	24				
	35	TTL					5	18		DM87S185B National MB7128H Fujitsu DM87S185A National N82S185B * Signetics		25
	45	TTL					5	18				
2Kx4	50	TTL					5	18		HL7685A-2 Lansdale (3549) HL7685A-5 Lansdale (3549) HL7685A-8 Lansdale (3549) DM77S185B National N82S185A * Signetics		30
	55	TTL					5	18		MB7128E Fujitsu MB7128E-W ♦ Fujitsu DM87S184 National DM87S185 National		35
	60	TTL					5	18		AM27PS185C AMD DM77S185A National R29651AC Raytheon		40
								24		29651A Raytheon 29653A Raytheon N82S191A * Signetics		
	65	TTL					5	18		AM27PS185M AMD R29653AC Raytheon		45
	70	TTL					5	18		HL7685-2 Lansdale (3549) HL7685-5 Lansdale (3549) HL7685-8 Lansdale (3549) MCM7685 Motorola DM77S184 National DM77S185 National R29651AM Raytheon		50
										29651C Raytheon		
	75	TTL					5	18		R29653AM Raytheon 29653C Raytheon		55
	80	TTL					5	18		S82S185A * Signetics S82S191A * Signetics		
	90	TTL					5	18		29651M Raytheon		
	95	TTL					5	18		29653M Raytheon	(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose											(Cont'd)	
2Kx4	100	TTL					5	18		N82S185	* Signetics	
	115	TTL					5	18		S82S185	* Signetics	
2Kx8	—	Emulator (RAM w/Bat.)								GR2716	Greenwich	
	15	CMOS Reg					5	24		CY7C245A-15C	* Cypress	
	18	CMOS Reg.					5	24		CY7C245A-18C	* Cypress	5
	20	CMOS					5	24		CY7C291A-20C	* Cypress	
										CY7C292A-20C	* Cypress	
										CY7C293A-20C	* Cypress	
		TTL					5	24		MB7238RA-20	Fujitsu	10
										MB7238RS-20	Fujitsu	
	25	Bipolar					5	24		MB71A38-25	Fujitsu	
		CMOS					5	24		CY7C291A-25C	* Cypress	
										CY7C291A-25M	* Cypress	15
										CY7C292A-25C	* Cypress	
										CY7C292A-25M	* Cypress	
										CY7C293A-25C	* Cypress	
										CY7C293A-25M	* Cypress	
		CMOS Reg					5	24		CY7C245-25C	* Cypress	20
		CMOS Reg.					5	24		CY7C245A-25C	* Cypress	
										CY7C245A-25M	* Cypress	
		Reg					5	24		DM87SR191	National	
										DM87SR193	National	
		TTL					5	24		MB7238RA-25	Fujitsu	25
										MB7238RA-25W	Fujitsu	
										MB7238RS-25	Fujitsu	
										MB7238RS-25W	Fujitsu	
										N82HS191	Signetics	
	30	CMOS					5	24		CY7C293A-30C	* Cypress	
		CMOS Reg.					5	24		CY7C291A-30M	* Cypress	
										CY7C292A-30M	* Cypress	30
										CY7C293A-30M	* Cypress	
											* Cypress	
	35	Bipolar					5	24		MB71A38-35	Fujitsu	35
		CMOS					5	24		CY7C291-35C	* Cypress	
										CY7C291-35M	* Cypress	
										CY7C291AL-35C	* Cypress	
										CY7C291L-35C	* Cypress	
										CY7C292-35C	* Cypress	
										CY7C292AL-35C	* Cypress	
										CY7C292L-35C	* Cypress	
										CY7C293A-30WC	* Cypress	40
										CY7C293AL-35C	* Cypress	
								25		TMS27PC292-35	TI	45
		CMOS Reg					5	24		CY7C245-35M	* Cypress	
		CMOS Reg.					5	24		CY7C245A-35C	* Cypress	
										CY7C245A-35M	* Cypress	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMS (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
2Kx8	35	CMOS Reg.					5	24			(Cont'd)	
										CY7C245AL-35C	Cypress	5
										CY7C245L-35C	Cypress	
										CY7C291A-35C	Cypress	
										CY7C291A-35M	Cypress	
										CY7C292A-35C	Cypress	
										CY7C292A-35M	Cypress	
										CY7C293A-35C	Cypress	
										CY7C293A-35M	Cypress	
		Reg					5	24		CY7C245-35C	Cypress	10
										MCM27S45A	Motorola	
										DM77SR191	National	
										DM77SR193	National	
		TTL					5	24		AM27S291A	AMD	15
										MB7138Y	Fujitsu	
										HL76161B	Lensdale (3549)	
										SFC71190C	SGS-Thomson	
										SFC71191C	SGS-Thomson	
45		CMOS					5	24		AT28HC191L-45	ATMEL	20
										CY7C245-45C	Cypress	
										CY7C245L-45C	Cypress	
										TMS27PC291	Ti	
										TMS27PC291-45	Ti	
										TMS27PC292	Ti	
										TMS27PC292-45	Ti	
		CMOS, E ²					5	24		AT28HC291L-45	ATMEL	25
		CMOS OTP					5	24		WS57C191-45	Waferscale (3751)	
										WS57C191B-45	Waferscale (3751)	
										WS57C291B-45	Waferscale (3751)	
		Reg					5	24		AM27S45	AMD	30
										CY7C245-45M	Cypress	
		TTL					5	24		MB7138H	Fujitsu	35
										93Z511C	National	
										μPB429-3	NEC	
										SFC71190B	SGS-Thomson	
										SFC71191B	SGS-Thomson	
50		CMOS					5	24		CY7C291-50C	Cypress	40
										CY7C291-50M	Cypress	
										CY7C291AL-50C	Cypress	
										CY7C291L-50C	Cypress	
										CY7C292-50C	Cypress	
										CY7C292-50M	Cypress	
										CY7C292AL-50C	Cypress	
										CY7C292L-50C	Cypress	
										CY7C293AL-50C	Cypress	
										TMS27PC291-5	Ti	45
										TMS27PC291-50	Ti	
										TMS27PC292-5	Ti	
										TMS27PC292-50	Ti	
		CMOS Reg.					5	24		CY7C291A-50C	Cypress	50
										CY7C291A-50M	Cypress	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
2Kx8	50	CMOS Reg.					5	24		CY7C292A-50C CY7C292A-50M CY7C293A-50C CY7C293A-50M	Cypress Cypress Cypress Cypress	(Cont'd)
		TTL					5	24		AM27PS191C AM27PS291C AM27S191 AM27S291 82HS191 HL76161A-2 HL76161A-5 HL76161A-8 MCM27S191 MCM76161A μPB429-2 R29681AC R29683AC	AMD AMD AMD AMD Intel Lansdale Lansdale Lansdale Motorola Motorola NEC Raytheon Raytheon	5 10 15 20
55		CMOS					5	24		AT28HC191L-55 LH57191J-55	ATMEL Sharp	
		CMOS, E ²					5	24		AT28HC291L-55 WS57C191-55 WS57C191B-55 WS57C291B-55	ATMEL Waferscale Waferscale Waferscale	25
		CMOS OTP					5	24		WS57C291B-55	Waferscale	
		TTL					5	24		MB7138E MB7138E-W MCM7685A 93Z511M	Fujitsu Fujitsu Motorola National	30
60		TTL					5	24		HL76161-2 HL76161-5 HL76161-8 μPB429-1 SFC71191A	Lansdale Lansdale Lansdale NEC SGS-Thomson	35
65		Reg					5	24		N82HS197 N82HS199	Signetics Signetics	
		TTL					5	24		AM27PS191M AM27S291M	AMD AMD	40
70		CMOS					5	24		LH57191-70 LH57191J-70	Sharp Sharp	
		TTL					5	24		82S191 MCM76161 R29681AM R29683AM	Intel Motorola Raytheon Raytheon	45
										29681A 29681A 29683A 29683A	Raytheon Raytheon Raytheon Raytheon	50
80		TTL					5	24		DM77S190 29681 SFC71190A N82S191	National Raytheon SGS-Thomson Signetics	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY

MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
2Kx8	85	TTL					5	24		29683	Raytheon	5
	90	CMOS					5	24		HM6617B-9	Harris	
										HM6617B/883	Harris	
	100	TTL					5	24		S82S191	* Signetics	
	120	CMOS					5	24		HM6617-9	Harris	
4Kx4										HM6617/883	Harris	10
	140	CMOS					5	24		HS6617RH	Harris (3526)	
	450	TTL					5	24		2716-45	Micro-C	15
	25	Reg					5	24		AM27S85AC	AMD	
		TTL					5	20		N82HS195B	* Signetics	20
	30	Reg					5	24		AM27S85AM	AMD	
										AM27S85C	AMD	25
	35	Reg					5	24		AM27S85M	AMD	
		TTL					5	20		AM27S41A	* AMD	30
										MB7152Y	Fujitsu	
										MCM76165A	Motorola	35
										N82HS195A	* Signetics	
	45	TTL					5	20		MB7152H	Fujitsu	40
										N82HS195	* Signetics	
	50	TTL					5	20		AM27S41	* AMD	45
										DM77S195B	National	
										S82HS195	* Signetics	50
	55	TTL					5	20		MB7134E	Fujitsu	
										MB7134E-W	Fujitsu	55
										MB7152E	Fujitsu	
	60	TTL					5	20		HL76165-2	Lansdale (3549)	60
										HL76165-5	Lansdale (3549)	
										HL76165-8	Lansdale (3549)	60
										DM77S195A	National	
4Kx8	—	Emulator (RAM w/Bat.)								AM27PS41	* AMD	30
	25	Bipolar					7	24		AM27S41M	* AMD	
	30	TTL					5	24		GR2732	Greenwich	35
	35	BiCMOS					5	24		82HS321C	* Signetics	
		CMOS					5	24		N82HS321B	* Signetics	40
							5	24		MB71C42-35	Fujitsu	
										27CX321-35	ICT	45
										27CX322-35	ICT	
		TTL					5	24		63S3281A	AMD	50
										N82HS321A	* Signetics	
	40	TTL					5	24		AM27S43A	AMD	55
	45	BiCMOS					5	24		MB71C42-45	Fujitsu	
		CMOS					5	24		27CX321-40	ICT	60
										27CX322-40	ICT	
										27CX322-45	ICT	60
		TTL					5	24		N82HS321	* Signetics	
	50	TTL					5	24		AM27S43	AMD	50
										63S3281	AMD	
										M3632	Intel	55
										3632	Intel	
	55	CMOS					5	24		27CX321-45	ICT	55
		TTL					5	24		MB7142H	Fujitsu	
										DM87S321	National	55
										DM87S421	National	
										R29771C	Raytheon	55
										R29773C	Raytheon	
	65	TTL					5	24		MB7142E	Fujitsu	60
										MB7142E-W	Fujitsu	
										HL76321-2	Lansdale (3549)	60
										HL76321-5	Lansdale (3549)	
										HL76321-8	Lansdale (3549)	60
										DM77S421	National	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
4Kx8	65	TTL					5	24		R29771M R29773M	◊ Raytheon ◊ Raytheon	5
	70	TTL					5	24		29671A 29671A	Raytheon Raytheon	
	80	TTL					5	24		29671 29671 29671A 29671A N82S321	Raytheon Raytheon Raytheon Raytheon Signetics	
	85	TTL					5	24		29673 29673	◊ Raytheon Raytheon	
	100	TTL					5	24		29671 29671	Raytheon Raytheon	
	105	TTL					5	24		29673 29673	◊ Raytheon Raytheon	
	150	TTL					5	24		2732-15 2732A-2	Micro-C Intel	
	200	NMOS TTL					5 5	24 24		2732-20	Micro-C	
	250	CMOS NMOS Programmable TTL					5 5 5 5	28 24 24 24		R2716-25 2732A TMS27P32A-25 2732-25	Rockwell Intel TI Micro-C	
	300	Programmable					5	24		TMS27P32A-30	TI	
	350	CMOS					5	28		R2716-350	Rockwell	
	450	Programmable					5	24		TMS27P32A-45	TI	
8K	450	CMOS					5	28		TMS27PC64-45	TI	
8Kx8	—	Emulator (RAM w/Bat.)								GR2764	Greenwich	30
	15	CMOS					5	32		CY7C269-15C	* Cypress	
	18	CMOS					5	32		CY7C269-18C	* Cypress	
										CY7C269-18M	* Cypress	
	20	CMOS					5	24		CY7C261-20C	* Cypress	
										CY7C263-20C	* Cypress	
										CY7C264-20C	* Cypress	
								28		CY7C266-20C	Cypress	
	25	Bipolar CMOS					7 5	24 24		82HS641C	* Signetics	
										CY7C261-25C	Cypress	
										CY7C263-25C	* Cypress	
										CY7C264-25C	* Cypress	
										CY7C264-25WC	* Cypress	
								28		CY7C266-25C	Cypress	
										CY7C266-25M	Cypress	
								32		CY7C269-25M	* Cypress	
	30	CMOS					5	24		CY7C261-30C	* Cypress	
										CY7C263-30C	* Cypress	
										CY7C263-30M	* Cypress	
										CY7C264-30C	* Cypress	
	35	BiCMOS CMOS					5 5	24 24		MB71C44-35	Fujitsu	50
										CY7C261-35C	* Cypress	
										CY7C261-35M	* Cypress	
										CY7C263-35C	* Cypress	
										CY7C263-35M	* Cypress	
										CY7C264-35C	* Cypress	
										CY7C264-35M	* Cypress	
										27CX641-40	ICT	
										27CX642-40	ICT	
		TTL					5	24		93Z665C	National	
										N82HS641B	* Signetics	
	40	CMOS CMOS Reg. Reg TTL					5 5 5 5	24 28 28 24		CY7C264-40C	* Cypress	60
										CY7C265-40C	Cypress	
										CY7C268-40C	Cypress	
										93Z667C-40	National	65
	45	BiCMOS CMOS					5 5	24 24		MB71C44-45	Fujitsu	
										CY7C261-45C	* Cypress	
										CY7C261-45M	* Cypress	
										CY7C263-45C	* Cypress	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
8Kx8	45	CMOS				5	24				(Cont'd)	
										CY7C263-45M * Cypress		
										CY7C264-45C * Cypress		
										CY7C264-45M * Cypress		
							28			CY7C266-45C Cypress		5
										CY7C266-45M Cypress		
							24			27CX641-45 ICT		
										27CX642-45 ICT		
										27HC641-45 Signetics		
										TMS27PC49-4 * TI		
										TMS27PC49-45 * TI		10
		TTL				5	24			MB7144Y Fujitsu		
										93Z565 National		
										93Z665M National		
										93Z667C-45 National		15
										93Z667M National		
										N82HS641A * Signetics		
49		CMOS, Reg				5	28			CY7C269-40C * Cypress		
50		CMOS Reg.				5	28			CY7C265-50C Cypress		
										CY7C265-50M * Cypress		
										CY7C265-50WM * Cypress		20
		CMOS, Reg				5	28			CY7C269-50C * Cypress		
										CY7C269-50M * Cypress		
		Reg				5	28			CY7C268-50C Cypress		
										CY7C268-50M * Cypress		
		TTL				5	24			HL76641A Lansdale		
										93Z667C-50 National	(3549)	25
										93Z667M-50 National		
55		CMOS				5	24			CY7C261-55C * Cypress		
										CY7C261-55M * Cypress		
										CY7C263-55C * Cypress		30
										CY7C263-55M * Cypress		
										CY7C264-55C * Cypress		
										CY7C264-55M * Cypress		
							28			CY7C266-55C Cypress		
										CY7C266-55M Cypress		35
							24			27CX641-55 ICT		
										27CX642-55 ICT		
										TMS27PC49-5 * TI		
										TMS27PC49-55 * TI		
		TTL				5	24			AM27S49AM AMD		40
										AM27S49C AMD		
										MB7144H Fujitsu		
										93Z565AM National		
										93Z565C National		
										93Z667M-55 National		45
										R29791C Raytheon		
										R29793C Raytheon		
										N82HS641 * Signetics		
		TTL/CMOS				5	24, 28			27HC641-55 Signetics		
60		CMOS				5	32			CY7C268-60C Cypress		50
										CY7C269-60C * Cypress		
		CMOS Reg.				5	28			CY7C265-60C Cypress		
										CY7C265-60M * Cypress		
		Reg				5	28			CY7C268-60M * Cypress		
										CY7C269-60M * Cypress		55
65		TTL				5	24			AM27S49M AMD		
										MB7144E Fujitsu		
										MB7144E-W * Fujitsu		
										93Z565M National		
70		CMOS				5	28			LH5749-70 Sharp		60
										LH5762-70 Sharp		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
8Kx8	75	TTL				5	24			R29791M R29793M	Raytheon Raytheon	
	85	TTL				5	24			HL76641-2 HL76641-5 HL76641-8	Lansdale (3549) Lansdale (3549) Lansdale (3549)	5
	90	CMOS				5	28			LH5763-90	Sharp	
	120	CMOS				5	28			TMS27PC64-12 TMS27PC64-120	Ti Ti	
	140	TTL				5	24			HL0512	Lansdale (3549)	10
	150	CMOS				5	28			TMS27PC64-1 TMS27PC64-15	Ti Ti	
	200	CMOS				5	28			MBM27C64-20 TMS27PC64-2 TMS27PC64-20	Fujitsu Ti Ti	
		CMOS OTP				5	28			LH5764-20	Sharp	15
		TTL				5	28			AM2764-20M	AMD	
	250	CMOS				5	28			MBM27C64-25W MBM27C64-25X R27C64-25 TMS27PC64 TMS27PC64-25	Fujitsu Fujitsu Rockwell Ti Ti	20
		CMOS OTP				5	28			LH5764-25	Sharp	25
		NMOS, Refurbished				5	28			2764A-250	Krueger	
		Programmable				5	28			TMS27P64-25	Ti	
		TTL				5	28			AM2764-25M	AMD	
	300	CMOS				5	28			MBM27C64-30X TMS27PC64-3 TMS27PC64-30 VT27C64-30	Fujitsu Ti Ti VLSI Tech	30
		NMOS, Refurbished				5	28			2764A-300	Krueger	
		Programmable				5	28			TMS27P64-30	Ti	
		UV EPROM				5	28			DM2764-300	SEEQ	
	350	CMOS				5	28			R27C64-35	Rockwell	35
	450	CMOS				5	28			TMS27PC64-4	Ti	
		NMOS, Refurbished				5	28			2764A-450	Krueger	
		Programmable				5	28			TMS27P64-45	Ti	
		TTL				5	28			AM2764-45M	AMD	
16Kx8	—	Emulator (RAM w/Bat.)								GR27128	Greenwich	
	35	BiCMOS				5	28			MB71C46-35	Fujitsu	40
	45	BiCMOS				5	28			MB71C46-45	Fujitsu	
		CMOS				5	28			CY7C251-45C CY7C254-45C	Cypress Cypress	
		TTL				5	24			N82HS1281	Signetics	
	55	CMOS				5	28			CY7C251-55C CY7C251-55M CY7C254-55C CY7C254-55M	Cypress Cypress Cypress Cypress	45
	65	CMOS				5	28			CY7C251-65C CY7C251-65M CY7C254-65C CY7C254-65M	Cypress Cypress Cypress Cypress	50
	90	CMOS				5	28			LH57126-90	Sharp	
	120	CMOS				5	28			LH57127-12	Sharp	
	150	CMOS				5	28			TMS27PC128-1 TMS27PC128-15	Ti Ti	55
	200	CMOS				5	28			MBM27C128-20 TMX27PC128-2 LH57128-20	Fujitsu Ricoh Sharp	
											(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
16Kx8	200	CMOS					5	28		TMS27PC128-2	(Cont'd)	
										* TI		
										TMS27PC128-20		
										* TI		
	250	CMOS					5	28		MBM27C128-25	Fujitsu	5
										TMX27PC128	Ricoh	
										LH57128-25	Sharp	
										TMS27PC128	* TI	
										TMS27PC128-25	* TI	
		Keyed Access					5	28		27916	Intel	
300	CMOS						5	28		MBM27C128-30	Fujitsu	10
										TMX27PC128-3	Ricoh	
										TMS27PC128-3	* TI	
										TMS27PC128-30	* TI	
	350	CMOS					5	28		TMX27PC128-4	Ricoh	
	450	CMOS					5	28		TMS27PC128-4	* TI	
										TMS27PC128-45	* TI	
										TMS27PS128-4	TI	15
32Kx8	—	Emulator (RAM w/Bat.)								GR27256	Greenwich	
	25	BiCMOS					5	28		MBM71C256	Fujitsu	
										MB71C256-25	Fujitsu	
	30	CMOS					5	28		CY7C277-30C	* Cypress	20
	35	BiCMOS					5	28		MB71C256-35	Fujitsu	
		CMOS					5	28		CY7C271-35C	* Cypress	
										(3434)		
										CY7C279-35C	Cypress	
	40	CMOS					5	28		CY7C277-40C	* Cypress	25
										CY7C277-40M	* Cypress	
45										WS57C71-40	Waferscale	
										(3751)		
										CY7C271-45C	* Cypress	
										(3434)		
										CY7C271-45WM	* Cypress	
										(3434)		
										CY7C274-45C	* Cypress	
										(3434)		
										CY7C279-45C	Cypress	30
										CY7C279-45M	Cypress	
50										WS57C71-45	Waferscale	
										(3751)		
										WS57C71-45M	Waferscale	
										(3751)		
										CY7C277-50C	* Cypress	35
										CY7C277-50M	* Cypress	
										CY7C271-55C	* Cypress	
										(3434)		
										CY7C271-55M	* Cypress	
										(3434)		
55										CY7C274-55C	* Cypress	
										(3434)		
										CY7C274-55M	* Cypress	
										(3434)		
										CY7C279-55C	Cypress	40
										CY7C279-55M	Cypress	
										LH5762J-55	Sharp	
										WS57C71-55	Waferscale	
										(3751)		
										WS57C71-55M	Waferscale	
70										(3751)		
										AT27HC256-70	* ATMEL	45
										LH57254J-70	Sharp	
										WS57C71-70M	Waferscale	
										(3751)		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
32Kx8	90	CMOS					5	28		LH57254-90 LH57254J-90	Sharp Sharp	5
	100	CMOS					5	28		MBM27C25611-10 LH57255J-10	Fujitsu Sharp	
	120	CMOS					5	28		MBM27C25611-12 LH57255-12 LH57255J-12 LH57256J-12	Fujitsu Sharp Sharp Sharp	
	150	CMOS					5	28		LH57256-15 LH57256J-15 TMS27PC256-15 * TI TMS27PC256-150 * TI	Sharp Sharp Sharp TI Sharp TI	
		CMOS OTP					5	28		TC54256A-15	Toshiba	
	170	CMOS					5	28		TMS27PC256-1 * TI TMS27PC256-17 * TI	Sharp TI Sharp TI	
		CMOS, OTP					5	28		27C256-17	Signetics	
	200	CMOS					5	28		MBM27C256A-20 TMS27PC256-2 * TI TMS27PC256-20 * TI	Fujitsu TI Sharp TI	
		CMOS, OTP CMOS OTP					5 5	28 28		27C256-20 TC54256A-20	Signetics Toshiba	
	250	CMOS					5	28		AM27C256-250 HN27C256FP-25 TMS27PC256 * TI TMS27PC256-25 * TI	AMD Hitachi TI TI TI	
		TTL/CMOS					5	28, 32		27C256-25	Signetics	
	300	CMOS					5	28		TMS27PC256-3 * TI TMS27PC256-30 * TI	TI TI TI TI	
	350 450	CMOS CMOS					5 5	28 28		TMX2PC256-4 TMS27PC256-4 * TI	TI TI TI	
64Kx8	45 50 55	CMOS CMOS CMOS					5 5 5	28 28 28		CY7C287-45C CY7C286-50C CY7C287-55C CY7C287-55M	Cypress Cypress Cypress Cypress	35
	60	CMOS					5	28		CY7C286-60C CY7C286-60M	Cypress Cypress	
	65	CMOS					5	28		CY7C285-65C CY7C287-65C CY7C287-65M CY7C289-65WC	Cypress (3434) Cypress Cypress Cypress (3434)	
	70	CMOS					5	28		CY7C286-70C CY7C286-70M	Cypress Cypress	
	75	CMOS					5	28		CY7C285-75C CY7C285-75M CY7C289-75M CY7C289-75WC	Cypress (3434) Cypress (3434) Cypress (3434) Cypress (3434)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Fuse Programmable—General Purpose										(Cont'd)			
64Kx8	85	CMOS					5	28		CY7C285-85C CY7C285-85M CY7C289-85M CY7C289-85WC	Cypress Cypress Cypress Cypress	(3434) (3434) (3434) (3434)	
	120	CMOS OTP					5			TMS27PC510-120	Ti	5	
	150	CMOS					5	28		TMS27PC512-15 TMS27PC512-150	* Ti * Ti		
		CMOS OTP					5	28		TC54512A-15	Toshiba		
	150 nsP	CMOS OTP					5			TMS27PC510-15 TMS27PC510-150	Ti Ti	10	
	170	CMOS					5	28		TMS27PC512-1 TMS27PC512-17	* Ti * Ti		
		CMOS OTP					5			TMS27PC510-17 TMS27PC510-170	Ti Ti		
	170 nsP	CMOS OTP					5			TMS27PC510-170	Ti	15	
	200	CMOS					5	28		MBM27C512-20 27C512I-20 TMS27PC512-2 TMS27PC512-20	Fujitsu Signetics * Ti * Ti		
		CMOS OTP					5			TMS27PC510-20 TMS27PC510-200	Ti Ti	20	
								28		TC54512A-20	Toshiba		
		NMOS OTP					5	28		TMM24512A-20	Toshiba	25	
		TTL					5	32		DQ48F512-20 NQ48F512-200	SEEQ SEEQ		
	250	CMOS					5	28		MBM27C512-25 TMS27PC512 TMS27PC512-25	Fujitsu * Ti * Ti		
		CMOS OTP					5			TMS27PC510-25 TMS27PC510-250	Ti Ti	30	
		TTL					5	32		DQ48F512-25 NQ48F512-250	SEEQ SEEQ		
	300	CMOS					5	28		TMS27PC512-3 TMS27PC512-30	* Ti * Ti		
		TTL					5	32		DQ48F512-30 NQ48F512-300	SEEQ SEEQ	35	
	450	CMOS					5	28		TMS27PC512-4 TMS27PC512-45	* Ti * Ti		
	64Kx16	30	BiCMOS					5	40		CY7B210-30 CY7B211-30	Cypress Cypress	40
		55	CMOS					5	40		WS57C210-55	Waferscale	
		70	CMOS					5	40		WS57C210-70 WS57C210-70M	Waferscale Waferscale	
		85	CMOS					5	40		TC54H1024-85	Toshiba	45
		100	CMOS					5	40		TC54H1024-10	Toshiba	
		120	CMOS					5	40		AT27C1024-12	ATMEL	
		(Continued)											

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY – PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line							
Fuse Programmable—General Purpose											(Cont'd)								
64Kx16	120	CMOS OTP					5				TMS27PC210A-12	(Cont'd)	5						
											Ti								
	150	CMOS					5	28			MBM27C1028-15	Fujitsu							
											CMOS OTP					TMS27PC210A-15	Ti		
																TMS27PC210A-150	Ti		
	200	CMOS					5	40	28			MBM27C1024-20		Fujitsu					
												CMOS OTP					MBM27C1028-20	Fujitsu	
																	TMS27PC210A-20	Ti	
																	TMS27PC210A-200	Ti	
	250	CMOS					5	40	28			MBM27C1024-25	Fujitsu	10					
												CMOS OTP					MBM27C1028-25	Fujitsu	
																	TMS27PC210A-25	Ti	
																	TMS27PC210A-250	Ti	
	TTL					5	68			MB98A6070-25	Fujitsu								
	128Kx8	30	BiCMOS					5	32			CY7B201-30	Cypress	15					
55		CMOS					5	32			WS57C010-55	Waferscale							
70		CMOS					5	32			WS57C010-70M	Waferscale							
100		CMOS OTP					5				TMS27PC010A-100	Ti							
120		CMOS					5	28			AT27C010-12	ATMEL	20						
											CMOS OTP					TMS27PC010A-12	Ti		
																TMS27PC010A-120	Ti		
150		CMOS OTP					5				TMS27PC010A-15	Ti	25						
											CMOS OTP					TMS27PC010A-150	Ti		
200		CMOS					5	32			TC541000-15	Toshiba	30						
											CMOS					TC541001-15	Toshiba		
																AM27C010-200	AMD		
250		CMOS					5	32			MBM27C1000-20	Fujitsu	35						
											CMOS					MBM27C1001-20	Fujitsu		
																MBM27C1028-20	Fujitsu		
CMOS OTP					5					TMS27PC010A-20	Ti	40							
CMOS OTP					5					TMS27PC010A-200	Ti								
TTL					5	32				TC541000-20	Toshiba	40							
TTL					5	32				TC541001-20	Toshiba								
250	CMOS					5	32	28	32	AM27C010-250	AMD	40							
										AT27C010-25	ATMEL								
										MBM27C1000-25	Fujitsu								
										MBM27C1001-25	Fujitsu								
										MBM27C1028-25	Fujitsu								
										MBM27C1028-25	Fujitsu								
TTL					5	32				DQ48F010-25	SEEQ	40							
TTL					5	32				NQ48F010-250	SEEQ								

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

(Continued)

MEMORY—PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Fuse Programmable—General Purpose										(Cont'd)		
128Kx8	300	TTL					5	32		DQ48F010-30 NQ48F010-300	SEEQ SEEQ	(Cont'd)
128Kx16	250	TTL					5	68		MB98A6080-25	Fujitsu	
256Kx16	80	CMOS OTP					5			TMS27PC240-8 TMS27PC240-80	Ti Ti	5
	100	CMOS OTP					5			TMS27PC240-10 TMS27PC240-100	Ti Ti	
	120	CMOS OTP					5			TMS27PC240-120 TMS279C240-12	Ti Ti	10
	150	CMOS OTP					5			TMS27PC240-15 TMS27PC240-150	Ti Ti	
	250	TTL					5	68		MB98A6090-25	Fujitsu	
512Kx8	80	CMOS OTP					5			TMS27PC040-8 TMS27PC040-80	Ti Ti	15
	100	CMOS OTP					5			TMS27PC040-10 TMS27PC040-100	Ti Ti	
	120	CMOS					5	32		TC544000-12 WS27C040-12	Toshiba Waferscale	20
		CMOS OTP					5			TMS27PC040-12 TMS27PC040-120	Ti Ti	
	150	CMOS					5	32		TC544000-15 WS27C040-15 WS27C040-15M	Toshiba Waferscale Waferscale	25
		CMOS OTP					5			TMS27PC040-15 TMS27PC040-150	Ti Ti	
	170	CMOS					5	32		WS27C040-17 WS27C040-17M	Waferscale Waferscale	
512Kx16	200	CMOS					5	64		MB838200-20	Fujitsu	
	250	TTL					5	68		MB98A6100-25	Fujitsu	
1Mx8	150	Flash CMOS					5	34		WF1024K8-150	White Tech	30
	200	CMOS					5	64		MB838200-20	Fujitsu	
Fuse Programmable—Modules												
8Kx8	200	Module					5	38		COB65464E	Microchip	
16Kx8	200	Module					5	38		COB654128E	Microchip	
32Kx8	200	Module					5	38		COB654C256E	Microchip	
64Kx8	200	Module					5	38		COB654512E	Microchip	35
128Kx8	250	Module					5	38		COB654512X2E	Microchip	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose												
64-Bit	—	Erasable								RP5H01	Ricoh	
64kx8	150	CMOS	CMOS/TTL	0.02	5	12.75	5	28		AM27C512L-150C ◊ AMD		
256x4	5	ECL 10K					-5.2	16		NM10E149-5	National	5
		ECL 100K					-4.5	16		NM100E149-5	National	
	7	ECL 10K					-5.2	16		NM10E149-7	National	5
		ECL 100K					-4.5	16		NM100E149-7	National	
	10	ECL					-5.2	16		MCM10149-10	ROHM	10
							-5	16		100149A	ROHM	
							5	16		10149A	ROHM	
		ECL 10K					-5.2	16		NM10E149-10	National	10
		ECL 100K					-4.5	16		NM100E149-10	National	
256x8		CMOS					5			AM1702	Scorpion Tech (3620)	
512x8	300	CMOS					10	24		IM6654A	Harris	15
	450	CMOS					5	24		IM6654-1	Harris	
	550	CMOS					5	24		IM6654	Harris	
	600	CMOS Erasable					5	24		IM6654M	Harris	
1Kx4	550	CMOS					5	24		IM6653-1	Harris	
	600	CMOS Erasable					5	24		IM6653M	Harris	
1Kx8	350	NMOS					± 5,12	24		2708-35	Krueger (3548)	20
							5	24		NMC27C58	National	
	450									SMJ27L08-45 ◊	Ti	20
										SMJ2708-45	Ti	
		NMOS					± 5,12	24		2708-45	Krueger (3548)	
2Kx8	25	CMOS Erasable					5	24		WS57C45-25 ◊	Waferscale (3751)	25
							5	24		TMS27PC291-3	Ti	
	35	CMOS					5	24		TMS27PC291-35	Ti	30
										CY7C245AL-35WC	Cypress	
										TMS27C291-3	Ti	
										TMS27C291-35	Ti	
		CMOS Erasable					5	24		TMS27C292-3	Ti	35
										WS57C191B-35	Waferscale (3751)	
										WS57C291B-35	Waferscale (3751)	
										WS57C45-35 ◊	Waferscale (3751)	
										WS57C45-35M ◊	Waferscale (3751)	35
		Erasable					5	24		TMS27C292-35	Ti	
45	CMOS Erasable						5	24		TMS27C291	Ti	40
										TMS27C291-45	Ti	
										TMS27C292	Ti	
										TMS27C292-45	Ti	
										WS57C191B-45M	Waferscale (3751)	
										WS57C291-45	Waferscale (3751)	
50	CMOS						5	24		WS57C291B-45M	Waferscale (3751)	45
										TMS27C292-5	Ti	
										TMS27C292-50	Ti	
										TMS27C291-5	Ti	
55	CMOS						5	24		TMS27C291-50	Ti	50
										XL46C16-55	EXEL	
										M36C16-55 ◊	SEEQ	
										WS57C191-55M	Waferscale (3751)	
										WS57C291-55	Waferscale (3751)	
										WS57C291-55M	Waferscale (3751)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
2Kx8	60	CMOS					5	24		XL46C16-60	EXEL	5
	70	CMOS					5	24		XL46C16-70	EXEL	
	85	CMOS					5	24		XL46C16-85	EXEL	
	350	Erasable					5	24		2716-1	Intel	
										2716-35	Micro-C	
										M2716-1	SGS-Thomson	10
		NMOS Erasable, Refurbished					5	24		2716-350	Krueger (3548)	
							± 5,12	24		2716T-350	Krueger	
	390	Erasable					5	24		HN462716-2	Hitachi	
										2716-2	Intel	
										2716-39	Micro-C	15
	450	Erasable					5	24		HN462716	Hitachi	
										M2716	Intel	
										2716	Intel	
									27C16-45	Micro-C		
									2716-45	Micro-C	20	
									2716-65	Micro-C		
									NMC27C16-45	National		
	NMOS Erasable, Refurbished					5	24		M2716	SGS-Thomson		
						± 5,12	24		2716-450	Krueger (3548)		
									2716T-450	Krueger	50	
4Kx8	35	CMOS					5	24		AM27C43-35C		AMD
										AM27C43-35M		AMD
										WS57C43B-35 *		Waferscale (3751)
	45	CMOS					5	24		M36C32-45		SEEQ
										WS57C43B-45 *		Waferscale (3751)
										WS57C43B-45M *		Waferscale (3751)
		CMOS Erasable					5	24		36C32-45		SEEQ
	55	CMOS					5	24		M36C32-55		SEEQ
										36C32-55		SEEQ
										WS57C43B-55 *		Waferscale (3751)
										WS57C43B-55M *		Waferscale (3751)
	70	CMOS					5	24		M36C32-70		SEEQ
										WS57C43B-70 *		Waferscale (3751)
										WS57C43B-70M *		Waferscale (3751)
	200						5	24		2732A-20		Intel
		CMOS					5	24		M2732A-2		SGS-Thomson
										NMC27C32B-200		National
	250						5	28		M2732A-25		Intel
										2732A-25		Intel
										M2732A		SGS-Thomson
		CMOS					5	24		RD27C32-25		Ricoh
		NMOS Refurbished					5	24		2732-250		Krueger (3548)
										2732A-250		Krueger
	300						5	24		M2732A-3		SGS-Thomson
										TMS2532-30		TI
										TMS2732A-30		TI
		CMOS					5	24		RD27C32-30		Ricoh
										TMS2532A-30		TI
		NMOS Refurbished					5	24		2732-300		Krueger (3548)
										2732A-300		Krueger
	350						5	24		NMC27C32-35		National
										SMJ2532-35		TI
										TMS2532-35		TI
										TMS2732A-35	TI	
(Continued)												

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
4Kx8	350	CMOS					5	24		RD27C32-35	Ricoh	5
										R87C32-35	Rockwell	
										2532-350	Krueger (3548)	
										2732-350	Krueger (3548)	
										2732A-350	Krueger	
	450						5	24		HN462532	Hitachi	10
										M2732A-45	Intel	
										2732-45	Micro-C	
										NMC27C32-45	National	
										M2732A-4	SGS-Thomson	
	CMOS						5	24		SMJ2532-45	TI	15
										TMS2532-45	TI	
										R87C32-45	Rockwell	
										TMS2532A-45	TI	
										2532-450	Krueger (3548)	
4Kx16	55	CMOS					5	40		2732-450	Krueger	20
										2732A-450	Krueger	
										WS57C65-55	Waferscale	
										WS57C65-70	Waferscale	
										WS57C65-70M	Waferscale	
	70	CMOS					5	40		μPD27HC65-25	NEC	25
										AT27HC641-35	ATMEL	
										CY7C266-35C	Cypress	
										NMC27C49-35	National	
										μPD27HC65-35	NEC	
8Kx8	25	CMOS					5	24		M27HC641	SGS-Thomson	30
										WS57C49B-35	Waferscale (3751)	
										CY7C261-40C	Cypress	
										CY7C263-40C	Cypress	
										AT27HC64-45	ATMEL	
	35	CMOS					5	28		AT27HC641-45	ATMEL	35
										AT27HC641L-45	ATMEL	
										AT27HC642-45	ATMEL	
										AT27HC642L-45	ATMEL	
										27HC64-45	Microchip	
8Kx16	40	CMOS					5	24		27HC64L-45	Microchip	40
										27HC641-45	Microchip	
										27HC641L-45	Microchip	
										NMC27C49-45	National	
										TMS27C49-4	TI	
	45	CMOS					5	28		TMS27C49-45	TI	45
										WS57C49B-45	Waferscale (3751)	
										WS57C49B-45M	Waferscale (3751)	
										AT27HC64-55	ATMEL	
										AT27HC64L-55	ATMEL	
8Kx32	55	CMOS					5	28		AT27HC641-55	ATMEL	50
										AT27HC641L-55	ATMEL	
										AT27HC642-55	ATMEL	
										AT27HC642L-55	ATMEL	
										27HC64-55	Microchip	
	CMOS						5	28		27HC64L-55	Microchip	50
										27HC641-55	Microchip	
										27HC641L-55	Microchip	
										27HC642-55	Microchip	
										27HC642L-55	Microchip	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
8Kx8	55	CMOS					5	24		NMC27C49-55 National LH5749J-55 Sharp TMS27C49-5 * TI TMS27C49-55 * TI	(Cont'd)	5
								28		WS57C49-90M * Wafer-scale		
								24		WS57C49B-55 * Wafer-scale (3751)		
										WS57C49B-55M * Wafer-scale (3751)		
								28		WS57C64F-55 Wafer-scale (3752)		
								70	24	AT27HC64-70 ATMEL		
									28	AT27HC64L-70		
										◊ ATMEL		
									24	AT27HC641-70 ATMEL		
										◊ ATMEL		
									28	AT27HC642-70		
										◊ ATMEL		
									24	AT27HC642L-70		
										◊ ATMEL		
									28	27HC64-70 Microchip 27HC64L-70 Microchip		
								24		27HC641-70 ◊ Microchip 27HC641L-70 ◊ Microchip LH5749J-70 Sharp		15
								28		LH5762J-70 Sharp LH5763J-70 Sharp		
								24		WS57C49B-70 * Wafer-scale (3751)		
										WS57C49B-70M * Wafer-scale (3751)		
								28		WS57C64F-70 Wafer-scale (3752)		
										WS57C64F-70M Wafer-scale (3752)		
								90	28	AM27C64-90 AMD		
									24	AT27HC64-90 ATMEL		
									28	AT27HC64L-90		
										◊ ATMEL		
										AT27HC641-90		
										◊ ATMEL		
										AT27HC642-90		
										◊ ATMEL		
										LH5763J-90 Sharp		
										WS27C64F-90M Wafer-scale		
								24		WS57C49-90M * Wafer-scale		25
								100	28	27C64-10 Microchip		
										TMS27C64-100 * TI		
								120	28	AM27C64-120 AMD (0003)		40
									24	AT27HC64-12 ATMEL		
									28	27C64A-12 Signetics		
										TMS27C64-12 * TI		
										TMS27C64-120 TI		
										WS27C64F-120M Wafer-scale		
								125	28	27C64-12 Microchip		
										2764-15 Micro-C		
										AM27C64-150 AMD (0003)		
										AT27C64-15 ATMEL		
								150	28	27C64-150 * Intel		50
										27C64-15 ◊ Microchip		
										NMC27C64-E150 National		
										NMC27C64-150 National		
										TS27C64A-15 SGS-Thomson		
										27C64A-15 Signetics		
										27C64AI-15 Signetics		
										27C64AI15 Signetics		
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
8Kx8	150	CMOS					5	28		TMS27C64-1 * TI TMS27C64-15 * TI	(Cont'd)	
										WS27C64F-150M	Waferscale	
		CMOS Erasable					5	28		M2F64A-15XF1	SGS-Thomson	5
	160 170	CMOS					5	28		2764-16 M2764A-1 27C64-17 TMS27C64-17 * TI	SEEQ SGS-Thomson Microchip	10
	180 200						5, 12.5 5	28		2764A-1 MBM2764-20 HN482764-2	* Intel Fujitsu Hitachi	15
							5, 12.5 5	28		2764A-2 2764A-20 2764-20	* Intel Intel Micro-C	20
		CMOS					5	28		DM2764-20 2764-20 8200501YA M2764A-2	SEEQ SEEQ SEEQ SGS-Thomson	25
							5, 12.5 5	28		AM27C64-200 AT27C64-20	AMD ATMEL	30
							5, 12.5 5	28		27C64-200 * 27C64-20 NMC27C64-E200 NMC27C64-M200	* Intel Microchip National	35
										27C64-200 μPD27C64-20 R87C64-2 ST27C64A LH5764J-20 27C64-20 27C64A-20 27C64AI-20 27C64AI20 TMS27C64-2 * TMS27C64-20 * TI	National National NEC Rockwell SGS-Thomson Sharp Signetics Signetics Signetics Signetics TI	40
		CMOS, Refurbished NMOS NMOS, Refurbished					5 5 5	28 28 28		27C64-200 ST2764A 2764-200 2764A-200	Krueger SGS-Thomson Krueger Krueger	45
											(3548)	
	250						5	28		MBM2764-25 HN482764-3 M2764-25 2764 2764-25	Fujitsu Hitachi * Intel * Intel * Intel	50
							5, 12.5 5	28		2764A 2764A-25 2764-17 2764-25	* Intel * Intel Micro-C Micro-C	55
		CMOS					5	28		DM2764-25 2764-25 8200502YA M2764A	SEEQ SEEQ SEEQ SGS-Thomson	60
										AM27C64-250 AT27C64-25 MBM27C64-25 27C64-25 NMC27C64-M250	AMD ATMEL Fujitsu Microchip National	65
										NMC27C64-250 27C64-250 μPD27C64-25 RD27C64-28 R87C64-25 TS27C64A-25 LH5764J-25	National National NEC Ricoh Rockwell SGS-Thomson Sharp	70

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
8Kx8	250	CMOS					5	28		TMS27C64 * TI TMS27C64-25 * TI	(Cont'd)	
		CMOS, Refurbished					5	28		27C64-250	Krueger	
		NMOS, Refurbished					5	28		2764-250	Krueger	
											(3548)	
	300						5	28		MBM2764-30 Fujitsu MBM2764-30X Fujitsu 2764-30 * Intel 2764-30 Micro-C		5
										2764-30 SEEQ M2764A-3 SGS-Thomson		10
		CMOS					5	28		AT27C64-30 ATMEL MBM27C64-30 Fujitsu MBM27C64-30W Fujitsu o Fujitsu		
							5, 12.5	28		27C64-300 * Intel 87C64-300 Intel		15
							5	28		μPD27C64-30 NEC RD27C64-30 Ricoh TS27C64A-30 SGS-Thomson TMS27C64-3 * TI TMS27C64-30 * TI		20
		CMOS, Refurbished					5	28		27C64-300	Krueger	
		NMOS, Refurbished					5	28		2764-300	Krueger	
											(3548)	
	350	CMOS					5	28		AT27C64-35 ATMEL 27C64-350 National R87C64-35 Rockwell		25
		NMOS	TTL		485	25	5	24	Refurbished	68766-350	Krueger	
											(3548)	
450							5	28		HN482764-4 Hitachi 2764-45 Micro-C		
										MSM2764A OKI DM2764-45 SEEQ 2764-45 SEEQ 8200507YA SEEQ M2764A-4 SGS-Thomson TMS2764H-45 * TI		30
		CMOS					5	28		TMS27C64-4 * TI TMS27C64-45 * TI		35
		NMOS	TTL		85	25	5	24	Refurbished	68766-450	Krueger	
		NMOS, Refurbished					5	24		2564-450	Krueger	
								28		2764-450	Krueger	
											(3548)	
	55	CMOS					5	44		MAP168-45	Waferscale	40
		CMOS					5	44		MAP168-55	Waferscale	
											(3750)	
16Kx4	200	CMOS Refurbished					5	28		27C128-200	Krueger	
		NMOS Refurbished					5	28		27128A-200	Krueger	
	250	CMOS Refurbished					5	28		27C128-250	Krueger	
		NMOS Refurbished					5	28		27128A-250	Krueger	45
	300	NMOS Refurbished					5	28		27128A-300	Krueger	
	450	NMOS Refurbished					5	28		27128A-450	Krueger	
16Kx8	40	CMOS					5	28		W557C51B-40	Waferscale	
	45									NMC27C51-45 National 27HC128-45FA Signetics W557C51B-45 Waferscale		50
											(3751)	
										W557C51B-45M o Waferscale		
											(3751)	
	55	CMOS					5	28		NMC27C51-55 National 27HC128-55FA Signetics		
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
16Kx8	55	CMOS					5	40 28		(Cont'd)		
										WS57C257-55	Waferscale	5
										WS57C51B-55	Waferscale (3751)	
										WS57C51B-55M	Waferscale (3751)	
										WS57C51B-70M	Waferscale (3751)	
	60	CMOS					5	28		WS57C128F-55	Waferscale (3752)	10
	70	CMOS					5	28		AM27C128-70	AMD	
										NMC27C51-70	National	
										LH57126J-70	Sharp	
	90	CMOS					5	28		WS57C128F-70	Waferscale (3752)	15
										WS57C128F-70M	Waferscale (3752)	
										WS57C51B-70	Waferscale (3751)	
	100	CMOS					5	28		AM27C128-90	AMD	20
	110	CMOS					5	28		LH57126J-90	Sharp	
										LH57127J-10	Sharp	
										TMS27C128-100	* TI	
	120	CMOS					5	28		WS27C128F-90M	Waferscale (3752)	25
										27128B-110V05	* Intel	
										AM27C128-120	AMD	
										AT27C128-12	ATMEL	
	135	CMOS					5	28		AT27513R-12	ATMEL	30
										27C128-12	Micro-C	
										SMJ27C128-12	* TI	
										TMS27C128-12	* TI	
	150	CMOS					5	28		TMS27C128-120	* TI	35
										WS27C128F-120M	Waferscale (3752)	
										MSM27128A-12	OKI	
										27C128-12	Microchip	
	170	CMOS					5	28		27128B-135V05	* Intel	40
										27128A-1	* Intel	
										27128B-150V05	* Intel	
										27128-15	Micro-C	
	200	CMOS					5	28		AM27C128-150	AMD	45
										AT27C128-15	ATMEL	
										27C128-15	Micro-C	
										27C128-15	Microchip	
	220	CMOS					5	28		SMJ27C128-15	* TI	50
										TMS27C128-1	* TI	
										TMS27C128-15	* TI	
										WS27C128F-150M	Waferscale (3752)	
	240	CMOS					5	28		27128B-150V10	* Intel	55
										MSM27128A-15	OKI	
										M27128A-1F1	SGS-Thomson	
										27C128-17	Microchip	
	260	CMOS					5	28		SMJ27C128-17	* TI	60
	280	CMOS					5	28		HN27128A-17	Hitachi	65
	300	CMOS					5	28		HN27128A-20	Hitachi	70
	320	CMOS					5	28		M27128	* Intel	75

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

(Continued)

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
UV Erasable—General Purpose										(Cont'd)			
16Kx8	200						5, 12.5	28		27128A-2	* Intel	(Cont'd)	
										27128A-20	* Intel		
										27128-20	Micro-C		
										DM27128-20	SEEQ		
										27128-20	SEEQ		
										8202508YA	SEEQ		
										M27128A-2	SGS-Thomson		
										CMOS			
										5	28		
										AM27C128-200	AMD	5	
										AT27C128-20	ATMEL		
										27C128-20	Micro-C		
										27C128-20	Microchip		
										NMC27CP128-200	National		
										LH57128J-20	Sharp		
										SMJ27C128-20			
										* TI			
										TMS27C128-2	* TI		
										TMS27C128-20	* TI	10	
										NMOS			
										5	28		
										NMOS Refurbished			
										5	28		
										ST27128A	SGS-Thomson		
										27128-200	Krueger		
										(3548)			
250							5	28		HN27128A-25	Hitachi	20	
										27128A	* Intel		
										27128A-25	* Intel		
										5	28		
										27128-25	Micro-C		
										DM27128-25	SEEQ		
										27128-25	SEEQ		
										8202502YA	SEEQ		
										M27128A	SGS-Thomson	25	
										CMOS			
										5	28		
										AM27C128-250	AMD		
										AT27C128-25	ATMEL		
										27C128-25	Micro-C		
										27C128-25	Microchip		
										NMC27CP128-250	National	30	
										27CP128-250	National		
										LH57128J-25	Sharp		
										TMS27C128	* TI		
										TMS27C128-25	* TI		
										NMOS Refurbished			
										5	28		
300							5, 12.5	28		27916-3	Intel	40	
										27128-30	Micro-C		
										27128-30	SEEQ		
										8202509YA	SEEQ		
										M27128A-3	SGS-Thomson		
										CMOS			
										5	28		
										AT27C128-30	ATMEL		
										NMC27CP128-300	National	45	
										27CP128-300	National		
										SMJ27C128-30			
										* TI			
										TMS27C128-3	* TI		
										TMS27C128-30	* TI		
										NMOS Refurbished			
										5	28		
350							5	28		27128-300	Krueger	50	
										(3548)			
										DM27128-35	SEEQ		
										AT27C128-35	ATMEL		
										27CP128-350	National		
										CMOS			
										5	28		
450							5	28		M27128-45	* Intel	55	
										27128-45	Micro-C		
										DM27128-45	SEEQ		
										27128-45	SEEQ		
										8202501YA	SEEQ		
										M27128A-4	SGS-Thomson		

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
16Kx8	450	CMOS						5	28	TMS27C128-4 * TI TMS27C128-45 * TI (Cont'd)		
		NMOS Refurbished						5	28	27128-450 Krueger (3548)		
16Kx8x4	150	CMOS						5	28	AT27513R-15 * ATMEL 27C513-150V10 Intel		
								5, 12.5	28	27513-170V05 Intel 27513-170V10 Intel		
								5, 12.5	28	27513-2 Intel 27513-20 Intel 27513-200V05 Intel 27513-200V10 Intel		
	200	CMOS						5	28	AT27513R-20 * ATMEL 27C513-200V10 Intel		
		Emulator with Battery						5	28	GR27513 Greenwich		
								5	28 5, 12.5	27513 Intel 27513-25 Intel 27513-25 Micro-C		
	250							5	28	AT27513R-25 * ATMEL		
								5	28			
								5	28	27011-200V05 * Intel		
	16Kx8x8	150	CMOS						5	28	27C011-150V10 Intel	
CMOS						5	28	AT27C011-17 * ATMEL				
CMOS						5	28	AT27C011-20 * ATMEL 27C011-200V10 Intel 2701T-200V10 * Intel				
250		Erasable						5	28	27011-200V05 * Intel		
		CMOS						5	28	AT27C011-25 * ATMEL 27011-250V05 * Intel 27011-250V10 * Intel		
		Erasable						5	28			
300		Erasable						5	32	27010-300V05 Intel 27010-300V10 Intel		
								28		27011-300V05 * Intel 27011-300V10 * Intel		
16Kx16		45	CMOS						5	40	27HC1616-45 Microchip	
	55	CMOS						5	40	27HC1616-55 Microchip		
	70	CMOS						5	40	27HC1616-70 Microchip WS57C257-70 Waferscale WS57C257-70M Waferscale		
	150	CMOS						5	40	TMS27C210-15 * TI TMS27C210-150 * TI		
32Kx8	25	CMOS Erasable, Refurbished						5	28	27C256-250 Krueger		
								5	28	μPD28C256-25 NEC		
								5	24	CY7C274-35C * Cypress (3434)		
	CMOS/TTL	25	50	12.75	5	28	AM27H256-35C * AMD					
	45	CMOS						5	24	27CX256-45 ICT (3544)		
		CMOS/TTL						5	28	AM27H256-45C * AMD		
	55	CMOS						5	28	CAT27HC256-55 Catalyst Semi (3435) 27HC256-55 Microchip NMC27C53-55 National WS57C256F-55 * Waferscale (3752)		
CMOS/TTL												
	25	50	12.75	5	28	AM27H256-55C * AMD (Continued)						

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
32Kx8	70	CMOS					5	28		AM27C256-70 * AMD AT27HC256-70 * ATMEL CAT27HC256-70 Catalyst Semi (3435) CAT27HC256L-70 Catalyst Semi (3425) CAT27HC256LI-70 Catalyst Semi (3425) CAT27HC256LM-70 * Catalyst Semi CAT27HC256M-70 * Catalyst Semi HN27C256H-7 Hitachi 27HC256-70 * Microchip NMC27C53-70 National TC57H256-70 Toshiba WS57C256-70 * Wafer scale (3752) WS57C256-70M * Wafer scale (3752)		5
		CMOS/TTL		25	50	12.75	5	28		AM27H256-70C * AMD		10
		CMOS, Erasable					5	28		AT27HC256L-70 * ATMEL		15
80		CMOS					5	28		M68C257B SGS-Thomson M87C257B SGS-Thomson		20
85		CMOS					5	28		HN27C256H-8 Hitachi 27C256-085 Micro-C TC57H256-85 Toshiba		25
90		CMOS					5	28		AM27C256-90 * AMD AM27F256 AMD AT27HC256-90 * ATMEL AT27HC256L-90 * ATMEL CAT27HC256-90 Catalyst Semi (3425) CAT27HC256L-90 Catalyst Semi (3425) CAT27HC256LI-90 Catalyst Semi (3425) CAT27HC256LM-90 * Catalyst Semi (3425) 27C256-090 Micro-C 27HC256-90 * Microchip NMC27C53-90 National VT27C256A VLSI Tech WS27C256L-90 Wafer scale (3752)		30
100		CMOS					5	28		AM27C256-100 * AMD WS27C256F-10M * Wafer scale (3752) WS27C256F-90M Wafer scale (3752) WS27C256L-10 Wafer scale (3752)		35
120		CMOS					5	66		DPV3232V-120 Dense-Pac AM27C256-120 * AMD AT27C256R-12 * ATMEL AT27HC256-12 * ATMEL CAT27HC256-12 Catalyst Semi (3425)		40

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
32Kx8	120	CMOS				5	28			CAT27HC256I-12 Catalyst Semi (3435) CAT27HC256L-12 Catalyst Semi (3435) CAT27HC256LI-12 Catalyst Semi (3425) CAT27HC256LM-12 Catalyst Semi (3425) CAT27HC256M-120 Catalyst Semi 27C256-120V10 Intel 27C256-12 Micro-C	(Cont'd)	5
										27C256-12 Microchip 27C256-12FA Signetics TMS27C256-12 TI TMS27C256-120 TI TMS27C256-150 TI TC57256A-12 Toshiba WS27C256F-120M Waferscale (3752) WS27C256F12M Waferscale WS27C256L-12 Waferscale (3752)		10
		NMOS				5	28			MSM27256-12 OKI		15
150		CMOS				5	28			AM27C256-150 AMD AT27C256R-15 ATME AT29C256-15 ATME		20
						32				AT29C257-15 ATME HN27C256 Hitachi 27C256-150V05 Intel 27C256-150V10 Intel 27C256-15 Micro-C		25
										27C256-15 Microchip μPD27C256-15 NEC (3592) RD27C256-15 Ricoh 27C256-15FA Signetics 27C256I-15 Signetics		30
						%	28			SMJ27C256-15 TI TMS27C256-15 TI TC57256A-15 Toshiba TC57256A-150 Toshiba WS27C256F-15M Waferscale (3752) WS27C256F-150M Waferscale (3752)		35
		CMOS, OTP				5	28			27C256-15 Signetics AT27256-15 ATME MSM27256-15 OKI		40
170		NMOS				5	28			27256-1 Intel 27256-17 Micro-C		45
		CMOS				5	28			AT27C256R-17 ATME HN27C256-17 Hitachi 27C256-1 Intel 27C256-170 Intel		45
						5	28			68C257-170V10 Intel 87C257 Intel 87C257-170V10 Intel 27C256-17 Microchip		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
UV Erasable—General Purpose										(Cont'd)			
32Kx8	170	CMOS					5	28		NMC27C256-17 27C256-17FA SMJ27C256-17 • TI TMS27C256-1 • TI TMS27C256-17 • TI TMS27C512-1 • TI	National Signetics	5	
										32	WS27C256F-17M ♦ Waferscale (3752)		
		NMOS					5	28		AT27256-17 M27256-1F1	ATMEL SGS-Thomson		
200							5	28		27256-2	• Intel	10	
							5, 12.5	28		27256-20	• Intel		
							5	28		27256-20 MSM27256-20 M27256-2	Micro-C OKI SGS-Thomson		
		CMOS					5	28		AM27C256-200 • AMD AT27C256R-20 • ATMEL AT29C256-20 ♦ ATMEL		15	
								32		AT29C257-20	ATMEL		
							5, 12.5	28		MBM27C256A-20 Fujitsu MBM27C256A-20W • Fujitsu		20	
							5	28		HN27C256-20	Hitachi		
							5, 12.5	28		27C256-2 27C256-20 27C256-200	Intel Intel Intel		
							5	28		27C256-200V10 • Intel 68C257-200V10 Intel		25	
							5, 12.5	28		87C256-2 87C256-20 87C256-200	Intel Intel Intel		
							5	28		87C257-200V10 Intel 27C256-20 Microchip NMC27C256-20 National μPD27C256-20 NEC (3592) RD27C256-20 Ricoh DM27C256-20 SEEQ DQ27C256-20 SEEQ		30	
								32 28		LM27C256-20 ♦ SEEQ ST27C256 SGS-Thomson TS27C256-20 SGS-Thomson 27C256-20FA Signetics 27C256i-20 Signetics SMJ27C256-20 • TI TMS27C256-2 • TI TMS27C256-20 • TI TMS87C257-200 TI		40	
								28		TC54245A Toshiba TC57256-20 Toshiba TC57256A-20 Toshiba		45	
								20 28		TC57256A-200 Toshiba TC58257A-20 Toshiba WS27C256F-20M ♦ Waferscale (3752)			
		TTL/CMOS					0.1	8	13	3-5	8	27LV256 ♦ † Microchip	
		CMOS, Module						5		66		DPV832V-200 Dense-Pac	55
		CMOS Refurbished						5		28		27C256-200 Krueger	
		NMOS						5		28		AT27256-20 ATMEL ST27256 SGS-Thomson (Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
32Kx8	200	NMOS Refurbished				5	28			27256-200	Krueger (3548)	
	250					5	28			HN27256-25 27C256 27256	Hitachi Intel Intel	
						5, 12.5 5	28 28			27256-25 27C256-13 27256-25	Intel Micro-C Micro-C	5
										MSM27256-25 M27256	OKI SGS-Thomson	
		CMOS				5	28			AT27C256R-25 AT29C256-25	ATMEL ATMEL	10
						32				AT29C257-25	ATMEL	
						5, 12.5	28			MBM27C256A-25 MBM27C256A-25W	Fujitsu Fujitsu	
						5	28			HN27C256-25 27C256-25 27C256-250	Hitachi Intel Intel	15
						5, 12.5	28			68C257-250V10 87C256 87C256-25 87C256-250	Intel Intel Intel Intel	20
						5	28			87C257-250V10 27C256-25	Intel Micro-C	
										27C256-25 NMC27C256-E250	Microchip National	25
										NMC27C256-M250 NMC27C256-25 27C256-250 μPD27C256-25 RD27C256-25 DM27C256-25 DQ27C256-25	National National National NEC (3592) Ricoh SEEQ SEEQ	30
						32 28				LM27C256-25 TS27C256-25 TMS27C256 TMS27C256-25	SEEQ SGS-Thomson TI TI	35
						28				TC57256-25 WS27C256F-25M	Toshiba Waferscale (3752)	
		NMOS				5	28			AT27256-25	ATMEL	40
		NMOS Refurbished				5	28			27256-250	Krueger (3548)	
300						5	28			HN27256-30 MSM27256-30	Hitachi OKI	
						24				M27256-3	SGS-Thomson	
		CMOS				5 5, 12.5	28 28			HN27C256-30 87C256-3 87C256-30 87C256-300	Hitachi Intel Intel Intel	45
						5	28			NMC27C256-30 27C256-300 μPD27C256-30 RD27C256-30 DM27C256-30	National National NEC (3592) Ricoh SEEQ	50
						32 28				LM27C256-30 TS27C256-30 SMJ27C256-30	SEEQ SGS-Thomson TI	55

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
32Kx8	300	CMOS					5	28		TMS27C256-3 * TI	(Cont'd)	5
										TMS27C256-30 * TI		
		CMOS Refurbished		5	28	27C256-300	Krueger (3548)					
		NMOS Refurbished		5	28	27256-300						
	350	CMOS		5	28	NMC27C256-M350 27C256-350						
450	CMOS				5	28			NMC27C256-45 National TMS27C256-4 * TI TMS27C256-45 * TI			
32Kx32	55	CMOS					5	66		DPV3232V-55 Dense-Pac	10	
										DPV3232VA-55 Dense-Pac		
										PUMA2U1000-55 Mosaic Semi		
										PUMA21000-55 Mosaic Semi		
	70	CMOS					5	66		DPV3232V-70 Dense-Pac	15	
										DPV3232VA-70 Dense-Pac		
										PUMA2U1000-70 Mosaic Semi		
	90	CMOS					5	66		DPV3232V-90 Dense-Pac	20	
										DPV3232VA-90 Dense-Pac		
										PUMA2U1000-90 Mosaic Semi		
	120	CMOS					5	66		DPV3232VA-120 Dense-Pac	25	
										PUMA2U1000-12 Mosaic Semi		
										PUMA2U2000-12 Mosaic Semi		
	150	CMOS					5	66		DPV3232V-150 Dense-Pac	30	
										DPV3232VA-150 Dense-Pac		
										PUMA2U1000-15 Mosaic Semi		
	170	CMOS					5	66		DPV3232V-170 Dense-Pac	35	
										PUMA2U1000-17 Mosaic Semi		
										PUMA2U2000-17 Mosaic Semi		
	200	CMOS					5	66		DPV3232VA-200 Dense-Pac	40	
										PUMA2U1000-20 Mosaic Semi		
										PUMA2U2000-20 Mosaic Semi		
36288x1	400	CMOS					5	8		XC1736 * Xilinx		
64Kx1	400	CMOS					5	8		XC1765 * Xilinx		
64Kx8	20	CMOS					5	28		TMS27C512-2 Ricoh	35	
										VT27C512A VLSI Tech		
	90	CMOS					5	28		WS27C512L-90 Waferscale		
			CMOS/TTL							AM27C512L-90C		
			0.02		5		12.75	5	28		* AMD	
			1		40		12.75	5	28	AM27C512-90C	* AMD	
	100	CMOS					5	28		AM27F512 AMD	40	
										M27C512 SGS-Thomson		
									M27C513 SGS-Thomson			
									M27C515 SGS-Thomson			
									M87C512 SGS-Thomson			
									WS27C512L-10 Waferscale	45		
120	CMOS					5	28		AT27C512R-12 * ATMEL			
									27C512-120V10 Intel	(Continued)		

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

* Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
64Kx8	120	CMOS					5	28		27C512-12 TMS27C510-12 TMS27C510-120	Signetics TI TI	(Cont'd)
								28		WS27C512L-12	Waterscale	
		CMOS/TTL										
		0.02		5		12.75	5	28		AM27C512L-120C ◊ AMD		5
		1		40		12.75	5	28		AM27C512-120C ◊ AMD		
		NMOS					5	28		MSM27512-12	OKI	
125		CMOS					5	28		27C512-12	Microchip	
150		CMOS					5	28		AT27C512R-15	• ATMEL Micro-C	10
										27C512-15	Microchip	
										NMC27C512AN150	National	
										27C512-15FA	Signetics	
										TMS27C510-15	TI	15
								28		TMS27C510-150	TI	
										TMS27C512-15	• TI	
										TMS27C512-150	• TI	
										TC57512A-15	Toshiba	
		CMOS/TTL										
		1		40		12.75	5	28		AM27C512-150C ◊ AMD		
		NMOS					5	28		MSM27512-15	OKI	20
170							5, 12.5	28		27512-170V05	• Intel	
										27512-17	Micro-C	
		CMOS					5	28		27C512-17	Micro-C	
										27C512-17	Microchip	
										NMC27C512AN170	National	25
										27C512A-170	◊ National	
										27C512-17FA	Signetics	
										TMS27C510-17	TI	
										TMS27C510-170	TI	
								28		TMS27C512-17	TI	30
		NMOS					5	28		TMM27512A-17	Toshiba	
200							5, 12.5	28		27512-2	• Intel	
										27512-20	• Intel	
										27512-200V05	• Intel	
										27512-200V10	• Intel	35
										27512-20	Micro-C	
								5	28	M27512-2	SGS-Thomson	
		CMOS					5	28		AM27C512-200	AMD	
										AT27C512R-20		
										27C512-200V10	• ATMEL Intel	40
										27C512-20	Microchip	
										27C512A-200	◊ National	
										27C512-20FA	Signetics	
										SMJ27C512-20	• TI	
										TMS27C510-20	TI	45
										TMS27C510-200	TI	
								28		TMS27C512-2	• TI	
										TMS27C512-20	• TI	
										TC57512A-20	Toshiba	
										TMM27512-20	Toshiba	50
		CMOS/TTL										
		0.02		5		12.75	5	28		AM27C512L-200C ◊ AMD		
		TTL/CMOS										
		0.1		12		13	3-5	28		27LV512	◊† Microchip	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
64Kx8	200	CMOS, Refurbished					5	28		27C512-200	Krueger	(Cont'd)
		Emulator with Battery					5	28		GR27512	Greenwich	
		NMOS					5	28		TMM27512A-20	Toshiba	
		NMOS, Refurbished					5	28		27512-200	Krueger	
	250						5	28		AM27512	AMD	5
										27512	* Intel	
							5, 12.5	28		27512-25	* Intel	
										27512-25	Micro-C	
							5	28		TMS27C512	Ricoh	
										M27512	SGS-Thomson	
		CMOS					5	28		AM27C512-250	AMD	
										AT27C512R-25	* ATMEL	
										27C512-25	Microchip	
										NMC27C512-250	National	
										NMC27C512AN250	National	
										27C512A-250	* National	
										SMJ27C512-25	* TI	
										TMS27C510-25	TI	
										TMS27C510-250	TI	
							28			TMS27C512	* TI	
										TMS27C512-25	* TI	
										TMM27512-25	Toshiba	
		CMOS/TTL										
		0.02					5	12.75	5	28	AM27C512L-250C	* AMD
	300	CMOS, Refurbished					5	28		27C512-250	Krueger	25
		NMOS					5	28		TMM24512	Toshiba	
		NMOS, Refurbished					5	28		27512-250	Krueger	
	300						5, 12.5	28		27512-3	* Intel	30
										27512-30	* Intel	
							5	28		27512-30	Micro-C	
										TMS27C512-3	Ricoh	
	300									M27512-3	SGS-Thomson	30
		CMOS					5	28		NMC27C512-300	National	
										SMJ27C512-30	* TI	
		NMOS					5	28		HN27512-25	Hitachi	
	350						5	28		TMS27C512-4	Ricoh	35
		CMOS					5	28		NMC27C512-350	National	
	450						5	28		27512-45	Micro-C	40
										M27512-4	SGS-Thomson	
		CMOS					5	28		TMS27C512.4	* TI	
										TMS27C512-45	* TI	
	200	CMOS					5	28		NMC27C512AN200	National	40
64Kx16	45	CMOS					5	40		27C213-45V05	Intel	45
	55						5	66		DPV3232V-55	Dense-Pac	
	55	CMOS					5	40		AT27HC1024-55	ATMEL	
										27C213-55V05	Intel	
										27C213-55V10	Intel	
		TTL/CMOS										
		0.1					60	12.75	5	40	TC57H1025A-55	Toshiba
	70	CMOS					5	40		AT27HC1024-70	* ATMEL	50
		TTL/CMOS										
		0.1					60	12.75	5	40	TC57H1025A-70	
	85	CMOS					5	40		TC57H1024-85	Toshiba	50
		TTL/CMOS										
		0.1					40	12.75	5	40	TC57H1024A-85	Toshiba

(Continued)

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line					
UV Erasable—General Purpose										(Cont'd)							
64Kx16	90	CMOS	TTL/CMOS 0.1	40	12.75	5	5	66		DPV3232V-90	Dense-Pac	(Cont'd)					
							5	40		AT27HC1024-90	◊ ATMEL						
	100	CMOS					5	40		TC57H1024-10	Toshiba	5					
							5	40		TC57H1024A-100	Toshiba						
	120	CMOS					5	66		DPV3232V-120	Dense-Pac	10					
							5	40		AM27C1024-120	* AMD						
										AT27HC1024-12	◊ ATMEL						
							28			MBM27C1028	Fujitsu						
								40			NMC27C1024-120	National	15				
											μPD27C1024A-12	NEC (3592)					
											M27C1024	SGS-Thomson					
											TMS27C210A-12	* TI					
											TMS27C210A-120	* TI	20				
								NMOS		5	40	MSM271024-12		OKI	25		
								130		CMOS	5	40		27C210-130V10		Intel	
	150						5				66	DPV3232V-150	Dense-Pac				
								40		27210-150V05	* Intel						
		CMOS										5	40		AM27C1024-150	* AMD	30
															AT27C1024-15	ATMEL	
															AT27C1024L-15	ATMEL	
															AT27HC1024-15	◊ ATMEL	
															CAT27C210-15	Catalyst Semi (3425)	
															MBM27C1024-15	Fujitsu	
27C210-150V10			◊ Intel														
27C210-150			Krueger (3548)														
27C210-170			Krueger (3548)														
NMC27C1024-150			National														
μPD27C1024A-15			NEC (3592)														
27C210-15FA			Signetics														
TMS27C210A-15			* TI														
TMS27C210A-150			* TI														
NMOS			5	40	MSM271024-15	OKI			35								
170			CMOS	5	40	AT27C1024-17									◊ ATMEL		
						AT27C1024L-17									◊ ATMEL		
						CAT27C210-170									Catalyst Semi (3425)		
			44	CAT27C210H-170	Catalyst Semi	40											
200	CMOS		5	40	AM27C1024-200		* AMD										
					AT27C1024-20		◊ ATMEL										
					AT27C1024L-20		◊ ATMEL										
			44	CAT27C210I-200	Catalyst Semi	45											
				40			27C210-200V10	◊ Intel									
				27C210-200	Krueger (3548)												
				NMC27C1024-200	National												
					μPD27C1024A-20	NEC (3592)	(Continued)										
					27C210-20FA	Signetics											

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
UV Erasable—General Purpose										(Cont'd)			
64Kx16	200	CMOS					5	40		SMJ27C210-20	(Cont'd)	5	
										* TI			
										TMS27C210-20	* TI		
										TMS27C210-200	* TI		
										TMS27C210A-20	* TI		
										TMS27C210A-200	* TI		
		40	TC571024-200	Toshiba									
	250	CMOS					5	40		AM27C1024-250	* AMD	10	
										AT27C1024-25	* ATMEL		
										AT27C1024L-25	* ATMEL		
										44	CAT27C210I-250		Catalyst Semi (3425)
										40	SMJ27C210-25		* TI
TMS27C210-25										* TI			
		TMS27C210A-25	* TI										
		TMS27C210A-250	* TI										
		40	TC571024-250	Toshiba	15								
64Kx32	120	EX					5	66		DPV6432V-120	Dense-Pac	20	
	150						5	66		DPV6432V-150	Dense-Pac		
	200						5	66		DPV6432V-200	Dense-Pac		
	250						5	66		DPV6432V-250	Dense-Pac		
	128Kx8	30	CMOS					5	44		27960C2-33	Intel	20
		40	CMOS					5	44		27960C2-25	Intel	
										27960LC2-25	Intel		
		45	CMOS					5	32		AM27H010-45	AMD	25
		50	CMOS					5	44		27960C1-20	Intel	
										27960LC1-20	Intel		
										27960LC2-20	Intel		
				CMOS/TTL	1	100	12.75	5	32		AM27HB010-50C	* AMD	30
			CMOS/TTL	1	100	12.75	5	28		AM27HB010-60C	AMD		
55		CMOS						5	66		DPV3232V-55	Dense-Pac	35
							5	32		AM27H010-55	AMD		
							24		27CX010-55	ICT (3544)			
62.5	CMOS						5	44		27960C1-16	Intel	40	
									27960LC1-16	Intel			
70	CMOS						5	32		AM27H010-70	AMD	45	
									CAT27HC010-70	Catalyst Semi			
									CAT27HC010I-70	Catalyst Semi			
								24		27CX010-70	ICT (3544)	40	
85	CMOS						5/12	32		TC57H1000A-85	Toshiba		
										TC57H1001A-85	Toshiba		
90	CMOS							5	66		DPV3232V-90	Dense-Pac	45
								5	32		AM27H010-90	AMD	
										CAT27HC010-90	Catalyst Semi		
										CAT27HC010I-90	Catalyst Semi	45	
		CMOS/TTL	1	100	12.75	5	32			AM27HB010-90C	* AMD		
100	CMOS							5			TMS27C010A-100	* TI	45
											WS27C010L-10	Waferscale (3752)	
								32					
120	CMOS							5	66		DPV3232V-120	Dense-Pac	
								5	32		AM27C010-120	AMD	
(Continued)													

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
128Kx8	120	CMOS					5	32		AM27C100-120 AM27F010 CAT27HC010-120 CAT27HC010i-120 27C010-120V10 27C100-120V10	AMD AMD Catalyst Semi Catalyst Semi Intel Intel	5
								44 32		27960KX M27C1000 M27C1001 M27C1011 M87C1000 M87C1001 TMS27C010A-12 TMS27C010A-120	* Intel SGS-Thomson SGS-Thomson SGS-Thomson SGS-Thomson SGS-Thomson * TI * TI	10
						5/12	32			TC571000A-12 TC571001A-12	Toshiba Toshiba	15
						5	32			WS27C010L-12 WS27C010L-12M	Waferscale (3752) Waferscale (3752)	
		NMOS Erasable				5	32			MSM271000-12	OKI	
150		CMOS					5 5	66 32		DPV3232V-150 AM27C010-150	Dense-Pac AMD	20
										AM27C100-150 AT27C010-15 AT27C010L-15 AT29C010-15 MBM27C1001-15	AMD ATMEL ATMEL ATMEL Fujitsu	25
										GR27010 27C100-150V10 NMC27C010-15 NMC27C010-150 μPD27C1000-15 μPD27C1001-15 TMS27C010A-15 TMS27C010A-150	Greenwich Intel National National NEC NEC (3592) * TI * TI	30
								32		TC571000-15	Toshiba	35
						5/12	32			TC571000A-15 TC571001-15 TC571001A-15	Toshiba Toshiba Toshiba	
						5/12	32			WS27C010L-15 WS27C010L-15M	Waferscale (3752) Waferscale (3752)	40
		NMOS				5	32			MSM271000-15	OKI	
		NMOS UV				5	32			CAT27010-15	Catalyst Semi	
170		CMOS					5	32		AT27C010-17 AT27C010L-17 NMC27C010-17 NMC27C010-170 NMC27C010M-17 NMC27C010M-170	ATMEL ATMEL National National National National	45
								28 32		TMS27C010-170 WS27C010L-17M	* TI Waferscale (3752)	50
200		CMOS					5	32		27010-200V05 AM27C100-200 AT27C010-20	Krueger (3548) AMD ATMEL	
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
128Kx8	200	CMOS					5	32		AT27C010L-20 ♦ ATMEL AT29C010-20 ATMEL DPV27C101-200 ♦ Dense-Pac HN27C101-20 Hitachi HN27C301-20 Hitachi 27C100-200V10 Intel NMC27C010-20 National NMC27C010-200 National NMC27C010M-20 National NMC27C010M-200 National μPD27C1000-20 NEC μPD27C1001-20 NEC (3592) SMJ27C010-20 ♦ TI TMS27C010-20 ♦ TI TMS27C010-200 ♦ TI TMS27C010A-20 ♦ TI TMS27C010A-200 ♦ TI		5
								32		TC571000-20 Toshiba TC571001-20 Toshiba TC571001-200 Toshiba WS27C010L-20M ♦ Waferscale (3752)		20
		TTL					5	32		CAT27010-20 Catalyst Semi		
128Kx8	250	CMOS					5	32		AT27C010L-25 ♦ ATMEL AT27C101-25 ♦ ATMEL AT29C010-25 ATMEL DPV27C101-250 ♦ Dense-Pac HN27C101-25 Hitachi HN27C301-25 Hitachi NMC27C010-25 National NMC27C010-250/883 ♦ National μPD27C1000-25 NEC SMJ27C010-25 ♦ TI TMS27C010-25 ♦ TI TMS27C010-250 ♦ TI TC571000-250 Toshiba TC571001-250 Toshiba WS27C010L-25M ♦ Waferscale (3752)		25
	300	CMOS					5	32		DPV27C101-300 ♦ Dense-Pac 27C010-300/883 ♦ National TMS27C010-30 ♦ TI TMS27C010-300 ♦ TI		30
	350	CMOS					5	32		DPV27C101-350 ♦ Dense-Pac		35
128Kx16	120	CMOS					5	66		DPV6432V-120 Dense-Pac AM27C2048-120 AMD		40
	120CMOS					12.5	5	40		MBM27C2048 Fujitsu DPV6432V-150 Dense-Pac AM27C2048-150 AMD 27C220-150V10 Intel NMC27C2048-15 National		45
	150	CMOS					5	40				50

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
128Kx16	170	CMOS					5	40		NMC27C2048-17 NMC27C2048M-17	National National	5
	200	CMOS					5	66		DPV6432V-200 AM27C2048-200 27C220-200V10	Dense-Pac AMD Intel	
							5	40		NMC27C2048-20 NMC27C2048M-20	National National	10
	250	CMOS					5	66		DPV6432V-250 AM27C2048-250 NMC27C2048-25	Dense-Pac AMD National	
							5	40				
		TTL					5	68		MB98A608A-25	Fujitsu	
128Kx32	45	CMOS					5	66		PUMA2U4002-45	Mosaic Semi	15
	55	CMOS					5	66		PUMA2U4002-55	Mosaic Semi	
	70	CMOS					5	66		PUMA2U4002-70	Mosaic Semi	20
	90	CMOS					5	66		PUMA2U4000-90 PUMA2U4002-90	Mosaic Semi Mosaic Semi	
												25
	120	CMOS					5	66		PUMA2U4000-12 PUMA2U4001-12	Mosaic Semi Mosaic Semi	
	150	CMOS					5	66		DPV12832V-150 PUMA2U4000-15 PUMA2U4001-15	Dense-Pac Mosaic Semi Mosaic Semi	30
							5	66				
	170	CMOS					5	66		PUMA2U4001-17	Mosaic Semi	35
	200	CMOS					5	66		DPV12832V-200 PUMA2U4001-20	Dense-Pac Mosaic Semi	
256Kx8	100	CMOS					5	66		TMS27C020-100	TI	40
	120	CMOS					5	32		DPV6432V-120 AM27C020-120 M27C2001-12 TMS27C020-12 TMS27C020-120	Dense-Pac AMD SGS-Thomson TI TI	
		CMOS				125.5	5	32		MBM27C2001	Fujitsu	45
	150	CMOS					5	66		DPV6432V-150 AM27C020-150	Dense-Pac AMD	
							5	32		27C020-150V10 NMC27C020-15 M27C2001-15 TMS27C020-15 TMS27C020-150	Intel National SGS-Thomson TI TI	50
	170	CMOS					5	32		NMC27C020-17 NMC27C020M-17	National National	
	200	CMOS					5	66		DPV6432V-200 AM27C020-200 27C020-200V10	Dense-Pac AMD Intel	55
							5	32		NMC27C020-20 NMC27C020M-20 M27C2001-20 TMS27C020-20 TMS27C020-200	National National SGS-Thomson TI TI	
												60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
256Kx8	250	CMOS					5	66		DPV6432V-250	Dense-Pac	5
							5	32		AM27C020-250	AMD	
										NMC27C020-25	National	10
										M27C2001-25	SGS-Thomson	
										TMS27C020-25	TI	15
										TMS27C020-250	TI	
										MB98A608A-25	Fujitsu	20
256Kx16	90	CMOS	CMOS/TTL	1	50	12.75	5	40		AM27C4096-90C	AMD	25
										M27C4002-10	SGS-Thomson	
	100	CMOS						40		TC574096-100	Toshiba	30
			CMOS/TTL	1	50	12.75	5	40		AM27C4096-100C	AMD	35
	120	CMOS					5	66		DPV12832V-120	Dense-Pac	40
										MBM27C4096	Fujitsu	
							5	40		M27C4002-12	SGS-Thomson	45
										TC574096-120	Toshiba	
	150	CMOS					5	66		DPV12832V-150	Dense-Pac	50
										27C240-150V10	Intel	
							5	40		27C400-150V10	Intel	55
										M27C4002-15	SGS-Thomson	
										27C240	Signetics	60
	200	CMOS					5	66		DPV12832V-200	Dense-Pac	65
										27C240-200V10	Intel	
							5	40		27C400-200V10	Intel	70
										M27C4002-20	SGS-Thomson	
	250	CMOS					5	66		DPV12832V-250	Dense-Pac	75
										M27C4002-25	SGS-Thomson	
		TTL					5	68		MB98A609A-25	Fujitsu	80
512Kx8	80	CMOS					5			TMS27C040-8	TI	85
										TMS27C040-80	TI	
										TMS27C240-8	TI	90
										TMS27C240-80	TI	
	90	CMOS	CMOS/TTL	1	40	12.75	5	32		AM27C040-90C	AMD	95
										AM27C400-90C	AMD	
	100	CMOS						32		M27C4001-10	SGS-Thomson	100
										TMS27C040-10	TI	
										TMS27C040-100	TI	105
										TMS27C240-10	TI	
			TTL/CMOS	0.1	70	12.5	5	40		TC574200-10	Toshiba	110
	120	CMOS					5	66		DPV12832V-120	Dense-Pac	115
										MBM27C4001	Fujitsu	
							5	32		M27C4001-12	SGS-Thomson	120
										TMS27C040-12	TI	
										TMS27C040-120	TI	125
										TMS27C240-12	TI	
										TMS27C240-120	TI	130
			CMOS/TTL	1	40	12.75	5	32		AM27C040-120C	AMD	135
										AM27C400-120C	AMD	
			TTL/CMOS	0.1	70	12.5	5	40		TC574200-120	Toshiba	140
	150	CMOS					5	66		DPV12832V-150	Dense-Pac	145
										DPV12832VA-150	Dense-Pac	
								32		27C040-150V10	Intel	150
										μPD27C4001-15	NEC (3592)	
										M27C4001-15	SGS-Thomson	155
										27C040	Signetics	
										TMS27C040-15	TI	160
										TMS27C040-150	TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—General Purpose										(Cont'd)		
512Kx8	150	CMOS					5			TMS27C040-150	Ti	5
										TMS27C240-15	Ti	
										TMS27C240-150	Ti	
			CMOS/TTL	1	40	12.75	5	32	40	AM27C040-150C	AMD	
										AM27C400-150C	AMD	10
	TTL/CMOS	0.1	70	12.5	5	40			TC574200-150	Toshiba		
	170	CMOS					5	66		DPV12832VA-170	Dense-Pac	15
								32		μPD27C4001-17	NEC (3592)	
	200	CMOS					5	66		DPV12832V-200	Dense-Pac	20
							5	66		DPV12832VA-200	Dense-Pac	
								32		27C040-200V10	Intel	
										μPD27C4001-20	NEC (3592)	
								M27C4001-20	SGS-Thomson	25		
CMOS/TTL		1	40	12.75	5	32	40	AM27C040-200C	AMD			
250	CMOS					5	66		DPV12832V-250	Dense-Pac	30	
						5	32		M27C4001-25	SGS-Thomson		
		CMOS/TTL	1	40	12.75	5	32		AM27C040-250C	AMD		
		TTL				5	68		MB98A609A-25	Fujitsu		
	120	CMOS				12.5	5	32		MBM27C4000	Fujitsu	35
512Kx16	170	CMOS					5	66		DPV256X32V-170	Dense-Pac	40
										DPV256X32V-200	Dense-Pac	
	200	CMOS					5	66		DPV256X32V-200	Dense-Pac	45
										DPV256X32V-250	Dense-Pac	
	250	CMOS					5	66		DPV256X32V-250	Dense-Pac	50
										MB98A610A-25	Fujitsu	
300	CMOS					5	66		DPV256X32V-300	Dense-Pac	55	
350	CMOS					5	66		DPV256X32V-350	Dense-Pac		
1Mx8	250	TTL					5	68		MB98A610A-25	Fujitsu	
UV Erasable—Modules												
16Kx16	55	CMOS, Module					5	66		DPV832V-55	Dense-Pac	30
	70	CMOS, Module					5	66		DPV832V-70	Dense-Pac	
	90	CMOS, Module					5	66		DPV832V-90	Dense-Pac	
	120	CMOS, Module					5	66		DPV832V-120	Dense-Pac	
	150	CMOS, Module					5	66		DPV832V-150	Dense-Pac	
	200	CMOS, Module					5	66		DPV832V-200	Dense-Pac	
32Kx8	55	CMOS, Module					5	66		DPV832V-55	Dense-Pac	35
	70	CMOS, Module					5	66		DPV832V-70	Dense-Pac	
	120	CMOS, Module					5	66		DPV832V-120	Dense-Pac	
	150	CMOS, Module					5	66		DPV832V-150	Dense-Pac	
32Kx16	55	CMOS Module					5	40		DPV32X16A-150	Dense-Pac	40
										DPV32X16A-55	Dense-Pac	
	70	CMOS Module					5	40		DPV32X16A-70	Dense-Pac	
	200	CMOS Module					5	40		DPV32X16A-200	Dense-Pac	
	250	CMOS Module					5	40		DPV32X16A-250	Dense-Pac	
	120	CMOS Module					5	40		DPV32X16A-120	Dense-Pac	
64Kx8	55	CMOS Module					5	40		DPV32X16A-90	Dense-Pac	45
	70	CMOS Module					5	40		DPV32X16A-70	Dense-Pac	
	90	CMOS Module					5	40		DPV32X16A-90	Dense-Pac	
	120	CMOS Module					5	40		DPV32X16A-120	Dense-Pac	
	150	CMOS Module					5	40		DPV32X16A-150	Dense-Pac	
200	55	CMOS Module					5	40		DPV32X16A-200	Dense-Pac	50
	70	CMOS Module					5	40		DPV32X16A-70	Dense-Pac	
	120	CMOS Module					5	40		DPV32X16A-120	Dense-Pac	
64Kx16	55	CMOS Module					5	40		DPV64X16A-200	Dense-Pac	
										DPV64X16A-55	Dense-Pac	
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
UV Erasable—Modules											(Cont'd)	
64Kx16	90	CMOS Module					5	40		DPV64X16A-90	Dense-Pac	5
	120	CMOS Module					5	40		DPV64X16A-120	Dense-Pac	
										DPV64X16A-120	Dense-Pac	
	170	CMOS Module					5	40		DPV64X16A-170	Dense-Pac	
	250	CMOS Module					5	40		DPV64X16A-250	Dense-Pac	
	150	CMOS Module					5	40		DPV64X16A-150	Dense-Pac	
128Kx8	55	CMOS Module					5	40		DPV64X16A-55	Dense-Pac	10
	70	CMOS Module					5	40		DPV64X16A-70	Dense-Pac	
	90	CMOS Module					5	40		DPV64X16A-90	Dense-Pac	
	120	CMOS Module					5	40		DPV64X16A-120	Dense-Pac	
	150	CMOS Module					5	40		DPV64X16A-150	Dense-Pac	
	170	CMOS Module					5	40		DPV64X16A-170	Dense-Pac	
	200	CMOS Module					5	40		DPV64X16A-200	Dense-Pac	
	250	CMOS Module					5	40		DPV64X16A-250	Dense-Pac	
128Kx16	300	Module					5	56		DPV6432V-300	Dense-Pac	15
256Kx8		Module					5	32		PEP256KX8E	Peps	20
	150	CMOS Module					5	40		DPV128X16A-150	Dense-Pac	
	170	CMOS Module					5	40		DPV128X16A-170	Dense-Pac	
	200	CMOS Module					5	40		DPV128X16A-200	Dense-Pac	
	250	CMOS Module					5	40		DPV128X16A-250	Dense-Pac	
256Kx30	300	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-30	Dense-Pac	25
256Kx32	170	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-17	Dense-Pac	
	200	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-20	Dense-Pac	
	250	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-25	Dense-Pac	
	350	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-35	Dense-Pac	
1Mx8	170	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-17	Dense-Pac	30
	200	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-20	Dense-Pac	
	250	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-25	Dense-Pac	
	300	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-30	Dense-Pac	
	350	CMOS	TTL/CMOS			12	5	66	PGA	DPV256X32V-35	Dense-Pac	
1Mx16	150	Flash Module					5	50		DPZ1MS16P-150	Dense-Pac (3453)	35
	200	Flash Module					5	50		DPZ1MS16P-200	Dense-Pac (3453)	
2Mx8	150	Flash Module					5	50		DPZ1MS16P-150	Dense-Pac (3453)	40
	200	Flash Module					5	50		DPZ1MS16P-200	Dense-Pac (3453)	
One-Time Programmable—General Purpose												
8Kx8	120	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X64-120C	AMD	35
	150	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X64-150C	AMD	
		OTP					5	28		CAT2764A-15	Catalyst Semi	
	200	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X64-200C	AMD	
		OTP					5	28		CAT2764A-20	Catalyst Semi	
16Kx8	250	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X64-250C	AMD	40
		OTP					5	28		CAT2764A-25	Catalyst Semi	
16Kx8	45	CMOS, OTP					5	28		27HC128-45	Signetics	(Continued)
	55	CMOS, OTP					5	28		27HC128-55	Signetics	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
One-Time Programmable—General Purpose										(Cont'd)		
16Kx8	120	CMOS	CMOS	0.1	25	12.74	5	28	OTP Alternative	AM27X128-120C	5	(Cont'd)
	150	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X128-150C		
		OTP					5	28		CAT27128A-15 Catalyst Semi		
	200	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X128-200C		
	250	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X128-250C		
32Kx8	120	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X256-120C	10	
		CMOS, OTP					5	28		27C256-12 Signetics		
	150	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X256-150C		
	170	OTP					5	28		CAT27256-17 Catalyst Semi		
	200	CMOS	CMOS	0.1	25	12.75	5	28	OTP Alternative	AM27X256-200C		
		TTL/CMOS		0.1	8	13	3-5	28		27LV256 Microchip		
	250	CMOS	CMOS	0.1	40	12.75	5	28	OTP Alternative	AM27X256-250C		
64Kx8	120	CMOS	TTL	0.1	40		5	28	OTP Alternative	AM27X512-120C	20	
	150	CMOS	TTL	0.1	40		5	28	OTP Alternative	AM27X512-150C		
		CMOS, OTP					5	28		27C512-15 Signetics		
		OTP					5	28		CAT27512-15 Catalyst Semi		
	170	CMOS, OTP					5	28		27C512-17 Signetics		
	200	CMOS	TTL	0.1	40		5	40	OTP Alternative	AM27X512-200C		
		TTL/CMOS		0.1	12	13	3-5	28		27LV256 Microchip		
		CMOS, OTP					5	28		27C512-20 Signetics		
64Kx16	85	CMOS	TTL/CMOS	0.1	40	12.75	5	32		TC54H1024-85	25	
										TC54H1024-85 Toshiba		
	100	CMOS	TTL/CMOS	0.1	40	12.75	5	40		TC54H1024-100		
										TC54H1024-100 Toshiba		
	120	CMOS	CMOS/TTL	0.2	50		5	40	OTP Alternative	64Kx16		
	150	CMOS	CMOS/TTL	0.2	50		5	40	OTP Alternative	AM27X1024-150C		
		CMOS, OTP					5	40		27C210-15 Signetics		
	200	CMOS	CMOS/TTL	0.2	50		5	40	OTP Alternative	AM27X1024-200C		
		CMOS, OTP					5	40		27C210-20 Signetics		
	250	CMOS	CMOS/TTL	0.2	50		5	40	OTP Alternative	AM27X1024-250C		
128Kx8	85	CMOS	TTL/CMOS	0.1	40	12/75	5	32		TC54H1000A-85	35	
										TC54H1000A-85 Toshiba		
						12.75	5	40		TC54H1001A-85		
										TC54H1001A-85 Toshiba		
	100	CMOS	TTL/CMOS	0.1	40	12.75	5	32		TC54H1000A-100		
										TC54H1001A-100		
										TC54H1001A-100 Toshiba		
120	CMOS	CMOS/TTL		0.1	30		5	32	OTP Alternative	AM27X010-120C		
										AM27X100-120C		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—EPROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
One-Time Programmable—General Purpose											(Cont'd)	
128Kx8	120	CMOS	TTL/CMOS	0/1	30	12.75	5	32		TC541001A-120	◊ Toshiba	(Cont'd)
				0.1	30	12.75	5	32		TC541000A-120	◊ Toshiba	
	150	CMOS	CMOS/TTL	0.1	30		5	32	OTP Alternative	AM27X010-150C	◊ AMD	5
										AM27X100-150C	◊ AMD	
			TTL/CMOS	0.1	30	12.75	5	32		TC541000A-150	◊ Toshiba	
										TC541001A-150	◊ Toshiba	
	200	CMOS	CMOS/TTL	0.1	30		5	32	OTP Alternative	AM27X010-200C	◊ AMD	10
										AM27X100-200C	◊ AMD	
	250	CMOS	CMOS/TTL	0.1	30		5	32	OTP Alternative	AM27X010-250C	◊ AMD	
										AM27X100-250C	◊ AMD	
128Kx16	150	CMOS	CMOS/TTL	0.1	50		5	40	OTP Alternative	AM27X2048-150C	◊ AMD	
	200	CMOS	CMOS/TTL	0.1	50		5	40	OTP Alternative	AM27X2048-200C	◊ AMD	
	250	CMOS	CMOS/TTL	0.1	50		5	40	OTP Alternative	AM27X2048-250C	◊ AMD	
256Kx8	150	CMOS	CMOS/TTL	0.1	30		5	32	OTP Alternative	AM27X020-150C	◊ AMD	15
					40		5	32	OTP Alternative	AM27X040-150C	◊ AMD	
	200	CMOS	CMOS/TTL	0.1	30		5	32	OTP Alternative	AM27X020-200C	◊ AMD	
					40		5	32	OTP Alternative	AM27X040-200C	◊ AMD	
512Kx8	120	CMOS	TTL/CMOS	0.1	60	12.5	5	40		TC544200-12	◊ Toshiba	20
	150	CMOS	TTL/CMOS	0.1	60	12.5	5	40		TC544200-15	◊ Toshiba	
128Kx8	50	CMOS	TTL				5	8	PROM	XC17128	◊ Xilinx	
64Kx16	120	CMOS	CMOS/TTL	0.2	50		5	40	OTP Alternative	AM27X1024-120C	◊ AMD	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—General Purpose												
32Kx8	90	CMOS	CMOS/TTK 10K	1	30	12	5	32		AM28F256-90C ◊ AMD		
	120	CMOS	CMOS/TTL 10K	1	30	12	5	32		28F256A-120 * Intel (3539) AM28F256-120C ◊† AMD		
	150	CMOS	CMOS/TTL 10K	1K	30	12	5	32		28F256A-150 * Intel (3539) AM28F256-150C ◊† AMD		5
		EPROM						5		TMS87C257-150 TI		
	170	E ²						5		TMS29F258-170 * TI TMS29F259-170 * TI		
		EPROM						5		TMS87C257-170 TI		
	200	CMOS	CMOS/TTL 10K	1	30	12	5	32		28F256A-200 * Intel (3540) AM28F256-200C ◊† AMD		10
		E ²						5		TMS29F258-200 * TI TMS29F258-200 * TI TMS29F259-200 * TI TMS29F259-200 * TI		15
	250	E ²						5		TMS29F258-250 * TI TMS29F259-250 * TI TMS29F259-250 * TI		
	300	E ²						5		TMS29F258-300 * TI TMS29F258-300 * TI TMS29F259-300 * TI TMS29F259-300 * TI		20
64Kx8	90	CMOS	CMOS/TTL 10K	1	30	12	5	32		AM28F512-120C ◊† AMD		
	100	E ²						5		TMS29F512-100 TI		
	120	CMOS						12	32	28F512-120 * Intel		25
		E ²						5		TMS29F512-12 TI TMS29F512-120 TI		
	150	CMOS	CMOS/TTL 10K	1	30	12	5	32		28F512-150 * Intel AM28F512-150C ◊† AMD		
		E ²						5		TMS29F512-15 TI TMS29F512-150 TI		30
	200	CMOS						5	32	CAT28F512 Catalyst Semi CAT28F512V5 Catalyst Semi CAT28F512V5-20 Catalyst Semi		
								12	32	28F512-200 * Intel		35
			TTL 10K	1	30	12	5	32		AM28F512-200C ◊† AMD		
		E ²						5		TMS29F512-20 TI TMS29F512-200 TI		
	250	CMOS						5	32	CAT28F512V5-25 Catalyst Semi (3425)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—FLASH (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—General Purpose										(Cont'd)		
128Kx8	90	CMOS	CMOS/TTL	10K	1	30	12	5	32	AM28F010-90C	◊ AMD	5
	100	E ²						5		TMS29F010-100 TI		
	120	CMOS						12	32	28F010-120 * Intel (3541)		
				10000	100	30	12	12	32	28F0001-120 ◊ Intel		
			CMOS/TTL	10K	1	30	12	5	32	AM28F010-120C	◊ AMD	
		E ²						5		TMS29F010-12 TI		10
										TMS29F010-120 TI		
		Flash						12	32	CAT28F010-12 Catalyst Semi (3425)		
	150	CMOS						12	32	28F010-150 * Intel (3541)		
				10000	100	30	12	12	32	28F020-150 * Intel (3542)		
			CMOS/TTL	10K	1	30	12	5	32	28F001-150 ◊ Intel (3536)		
										AM28F010-150C	◊ AMD	15
		E ²						5		TMS29F010-15 TI		
										TMS29F010-150 TI		
		Flash						12	32	CAT28F010-15 Catalyst Semi (3425)		
										CAT28F010-20 Catalyst Semi (3425)		
200	CMOS							12	32	28F010-200 * Intel (3541)		20
										28F020-200 Intel (3542)		
			CMOS/TTL	10K	1	30	12	5	32	AM28F010-200C	◊ AMD	
		E ²						5		TMS29F010-20 TI		
										TMS29F010-200 TI		
128Kx32	90	CMOS						5	66	PUMA2F4002-90 Mosaic Semi		25
	120	CMOS						5	66	PUMA2F4000-12 Mosaic Semi		
										PUMA2F4002-12 Mosaic Semi		
										PUMA3F4003-12 Mosaic Semi		
	150	CMOS						5	66	PUMA2F4000-15 Mosaic Semi		30
										PUMA2F4002-15 Mosaic Semi		
										PUMA3F4003-15 Mosaic Semi		
	200	CMOS						5	66	PUMA2F4000-20 Mosaic Semi		
256Kx8	90	CMOS	CMOS/TTL	10K	1	30	12	5	32	AM28F020-90C	◊ AMD	35
	120	CMOS	CMOS/TTL	10K	1	30	12	5	32	AM28F020-120C	◊ AMD	
	150	CMOS	CMOS/TTL	10K	1	30	12	5	32	AM28F020-150C	◊ AMD	
	200	CMOS	CMOS/TTL	10K	1	30	12	5	32	AM28F020-200C	◊ AMD	
										AM28F020-200C	◊ AMD	
256Kx32	150	CMOS						5	66	PUMA3F8003-15 Mosaic Semi		40
	170	CMOS						5	66	PUMA3F8003-17 Mosaic Semi		
	200	CMOS						5	66	PUMA3F8003-20 Mosaic Semi		
512Kx16	120	CMOS						12	80	SM28F001AX-120 Intel (3536)		45
	150	CMOS						12	80	M28F001AX-150 Intel (3536)		
	200	CMOS						12	80	SM28F001AX-200 Intel (3536)		
1Mx8	120	CMOS						5	35	MF81000-12 Mosaic Semi		45
	150	CMOS						5	35	MF81000-15 Mosaic Semi		
	200	CMOS						5	35	MF81000-20 Mosaic Semi		
				10000	8	50	12	12	68	Flash Memory Card	IMC001 Intel (3536)	
2Mx8	200	CMOS		10000	8	50	12	12	68	Flash Memory Card	IMC002 Intel (3536)	
4Mx8	200	CMOS		10000	16	70	12	12	68	Flash Memory Card	IMC004 Intel (3538)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—General Purpose											(Cont'd)	
64Kx8	90	CMOS	CMOS/TTL 10K	1	30	12	5	32		AM28F512-90C ◊ AMD		
Flash Memories—Modules												
Mx16	170	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ1MX16V3-20 † Dense-Pac		
2Mx8	200	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ1MX16V3-20 † Dense-Pac		
1.5Mx16	120	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-12 † Dense-Pac		5
	150	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-15 † Dense-Pac		
	170	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-17 † Dense-Pac		
	200	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-20 † Dense-Pac		
	250	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-25 † Dense-Pac		
3Mx8	120	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-12 † Dense-Pac		10
	150	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-15 † Dense-Pac		
	170	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-17 † Dense-Pac		
	200	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-20 † Dense-Pac		
	250	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ155X16V3-25 † Dense-Pac		
8Mx8	120	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-12 † Dense-Pac		15
	150	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ2MX32V3-15 † Dense-Pac		
	170	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ2MX32V3-17 † Dense-Pac		
	200	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ2MX32V3-20 † Dense-Pac		
	250	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ2MX32V3-25 † Dense-Pac		
768Kx32	120	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ750X32V3-12 † Dense-Pac		20
	150	CMOS	TTL/CMOS			12	5	66	PGA	DPZ750X32V3-15 † Dense-Pac		
	170	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ750X32V3-17 † Dense-Pac		
	200	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ750X32V3-20 † Dense-Pac		
	250	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ750X32V3-25 † Dense-Pac		
1228Kx32	150	CMOS	TTL/CMOS 10K			12	5	66	PGA	DPZ128X32V3-15 † Dense-Pac		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line	
Flash Memories—Modules										(Cont'd)			
64Kx8	150	CMOS Module						5	40		DPZ32X16A-150	Dense-Pac	5
	170	CMOS Module						5	40		DPZ32X16A-170	Dense-Pac	
	200	CMOS Module						5	40		DPZ32X16A-200	Dense-Pac	
	300	CMOS Module						5	40		DPZ32X16A-300	Dense-Pac	
	350	CMOS Module						5	40		DPZ32X16A-350	Dense-Pac	
128Kx8	120	CMOS Module						5	40		DPZ64X16A-120	Dense-Pac	10
	135	CMOS Module						5	40		DPZ64X16A-135	Dense-Pac	
	150	CMOS Module						5	66		DPZ32X32V-150	Dense-Pac	15
									40		DPZ64X16A-150	Dense-Pac	
	170	CMOS Module						5	66		DPZ32X32V-170	Dense-Pac	20
									40		DPZ64X16A-170	Dense-Pac	
	200	CMOS Module						5	66		DPZ32X32V-200	Dense-Pac	25
									40		DPZ64X16A-200	Dense-Pac	
	250	CMOS Module						5	66		DPZ32X32V-250	Dense-Pac	30
									40		DPZ64X16A-250	Dense-Pac	
300	CMOS Module						5	66		DPZ32X32V-300	Dense-Pac	35	
								40		DPZ64X16A-300	Dense-Pac		
350	CMOS Module						5	66		DPZ32X32V-350	Dense-Pac		
128Kx16	120	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-12 ⬆ Dense-Pac	20	
	150	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-15 ⬆ Dense-Pac		
	170	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-17 ⬆ Dense-Pac DPZ128X16A3-17 ⬆ Dense-Pac		
	200	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-20 ⬆ Dense-Pac		
	250	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-25 ⬆ Dense-Pac		
128Kx32	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-12 ↑ Dense-Pac	25	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-17 ↑ Dense-Pac		
	200	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-20 ↑ Dense-Pac		
	250	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-25 ↑ Dense-Pac		
256Kx8	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X16A3-12 ⬆ Dense-Pac	30	
		CMOS Module						5	40		DPZ128X16A-120 Dense-Pac		
									66		DPZ64X32V-120 Dense-Pac		
	135	CMOS Module						5	40		DPZ128X16A-135 Dense-Pac	35	
	150	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-15 ⬆ Dense-Pac		
		CMOS Module						5	66		DPZ64X32V-150 Dense-Pac		
	170	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A3-17 ⬆ Dense-Pac		
		CMOS Module						5	40		DPZ128X16A-170 Dense-Pac		
									66		DPZ64X32V-170 Dense-Pac		
(Continued)													

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules											(Cont'd)	
256Kx8	200	CMOS	TTL/CMOS 10K				12	5	50	PGA	(Cont'd)	
											DPZ128X16A3-20	5
											DPZ128X16A-200	
	250	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ128X16A-250	
											DPZ64X32V-200	
											DPZ64X32V-250	
	300	CMOS Module							5	40	DPZ128X16A-300	10
											DPZ64X32V-300	
	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-12	15
											DPZ256X16A3-12	
											DPZ256X16V3-12	
256Kx16	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-15	20
											DPZ256X16A3-15	
											DPZ256X16V3-15	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-17	25
											DPZ256X16A3-17	
											DPZ256X16V3-17	
	200	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-20	30
											DPZ256X16A3-20	
											DPZ256X16V3-20	
	250	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ128X32V3-25	35
											DPZ256X16A3-25	
											DPZ256X16V3-25	
256Kx32	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ256X32V3-12	40
											DPZ256X32V3-12	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ256X32V3-15	45
											DPZ256X32V3-17	
											DPZ256X32V3-20	
512Kx2	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ512X16V3-12	50

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	No. Erase/ Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules											(Cont'd)	
512Kx8	120	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ256X16A3-12 ‡ Dense-Pac	5
										66	PGA	
											‡ Dense-Pac	
	135	CMOS	Module					5	66		DPZ128X32V-120 Dense-Pac	
	150	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ256X16A3-15 ‡ Dense-Pac	
											‡ Dense-Pac	
	170	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ256X16A3-17 ‡ Dense-Pac	
											‡ Dense-Pac	
	200	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ256X16A3-20 ‡ Dense-Pac	10
											‡ Dense-Pac	
	250	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ256X16A3-25 ‡ Dense-Pac	
											‡ Dense-Pac	
	300	CMOS	Module					5	66		DPZ128X32V-200 Dense-Pac	
512Kx16	120	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ512X16A3-12 ‡ Dense-Pac	20
	150	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ256X32V3-15 ‡ Dense-Pac	
											‡ Dense-Pac	
	170	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X16A3-17 ‡ Dense-Pac	
											‡ Dense-Pac	
	200	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ256X32V3-20 ‡ Dense-Pac	25
											‡ Dense-Pac	
	250	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X16A3-25 ‡ Dense-Pac	
											‡ Dense-Pac	
	300	CMOS	Module					5	66		DPZ128X32V-300 Dense-Pac	

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	No. Erase/ Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules											(Cont'd)	
512Kx32	120	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X32V3-12 † Dense-Pac	5
	150	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X32V3-15 † Dense-Pac	
	170	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X32V3-17 † Dense-Pac	
	200	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X32V3-20 † Dense-Pac	
	250	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ512X32V3-25 † Dense-Pac	
1Mx8	120	CMOS	TTL/CMOS	10K			12	5	50W	PGA	DPZ512X16A3-12 ‡ Dense-Pac	10
									66	PGA	DPZ512X16V3-12 † Dense-Pac	
	150	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ512X16A3-15 ‡ Dense-Pac	
									66	PGA	DPZ512X16V3-15 † Dense-Pac	
	170	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ512X16A3-17 ‡ Dense-Pac	
									66	PGA	DPZ512X16V3-17 † Dense-Pac	
			CMOS Module					5	66		DPZ256X32V-170 Dense-Pac	
	200	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ512X16A3-20 ‡ Dense-Pac	
									66	PGA	DPZ512X16V3-20 † Dense-Pac	
			CMOS Module					5	66		DPZ256X32V-200 Dense-Pac	
250	CMOS	TTL/CMOS	10K				12	5	50	PGA	DPZ512X16A3-25 ‡ Dense-Pac	15
									66	PGA	DPZ512X16V3-25 † Dense-Pac	
			CMOS Module					5	66		DPZ256X32V-250 Dense-Pac	
1Mx16	120	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ1MX16A3-12 ‡ Dense-Pac	20
									66	PGA	DPZ1MX16V3-12 † Dense-Pac	
											DPZ512X32V3-12 Dense-Pac	
	150	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ1MX16A3-15 ‡ Dense-Pac	
									66	PGA	DPZ1MX16V3-15 † Dense-Pac	
											DPZ512X32V3-15 † Dense-Pac	
	170	CMOS	TTL/CMOS	10K			12	5	50	PGA	DPZ1MX16A3-17 ‡ Dense-Pac	
									66	PGA	DPZ1MX16V3-17 † Dense-Pac	
											DPZ512X32V3-17 † Dense-Pac	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—FLASH (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules												(Cont'd)
1Mx16	200	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-20	(Cont'd)
										66	DPZ512X32V3-20	
	250	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-25	5
										66	DPZ1MX16V3-25	
											DPZ512X32V3-25	
											† Dense-Pac	
1Mx32	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-12	10
											† Dense-Pac	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-15	15
											† Dense-Pac	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-17	20
											† Dense-Pac	
2Mx8	170	CMOS	TTL/CMOS 10K				12	5	6	PGA	DPZ512X32V3-17	15
											† Dense-Pac	
	120	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-12	20
										66	DPZ1MX16V3-12	
											† Dense-Pac	
											† Dense-Pac	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX16V3-15	25
											† Dense-Pac	
	170	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-15	30
										66	DPZ1MX16V3-17	
	200	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-20	35
										66	DPZ512X32V3-20	
											† Dense-Pac	
											† Dense-Pac	
	250	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ1MX16A3-25	40
										66	DPZ1MX16V3-25	
2Mx16	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-12	45
										50	DPZ2MX16A3-12	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—FLASH (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	No. Erase/ Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules											(Cont'd)	
2Mx16											(Cont'd)	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-15 † Dense-Pac	5
									50	PGA	DPZ2MX16A3-15 ◊† Dense-Pac	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-17 † Dense-Pac	
									50	PGA	DPZ2MX16A3-17 † Dense-Pac	
	200	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-20 Dense-Pac	
									50	PGA	DPZ2MX16A3-20 ◊† Dense-Pac	
	250	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-25 † Dense-Pac	
									50	PGA	DPZ2MX16A3-25 † Dense-Pac	
2Mx32	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-12 † Dense-Pac	10
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-15 † Dense-Pac	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-17 † Dense-Pac	
	200	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-20 † Dense-Pac	
	250	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-25 Dense-Pac	
4Mx8	200	CMOS	TTL/CMOS 10K				12	5	50	PGA	DPZ4MX8A3-20 ◊† Dense-Pac	15
4Mx8	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-12 † Dense-Pac	
									50	PGA	DPZ4MX8A3-12 † Dense-Pac	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-15 † Dense-Pac	
									50	PGA	DPZ4MX8A3-15 ◊† Dense-Pac	
									66	PGA	DPZ4MZ8A3-15 ◊ Dense-Pac	
	170	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-17 † Dense-Pac	
									50	PGA	DPZ4MX8A3-17 ◊† Dense-Pac	
	200	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-20 † Dense-Pac	
	250	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ1MX32V3-25 † Dense-Pac	
									50	PGA	DPZ4MX8A3-25 ◊† Dense-Pac	
		CMOS Module						5	48		DPZ2MS16P-250 Dense-Pac (3453)	25
	300	CMOS Module						5	48		DPZ2MS16P-300 Dense-Pac (3453)	
4Mx16	120	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-12 Dense-Pac	
	150	CMOS	TTL/CMOS 10K				12	5	66	PGA	DPZ2MX32V3-15 † Dense-Pac	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—FLASH (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	No. Erase/ Write Cycle	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage Pins	No. of Comments	Device	Source	Line
Flash Memories—Modules											(Cont'd)	
	170	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ2MX32V3-17	† Dense-Pac
	200	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ2MX32V3-20	† Dense-Pac
	250	CMOS	TTL/CMOS	10K			12	5	66	PGA	DPZ2MX32V3-25	† Dense-Pac

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

MEMORY

MEMORY—E² PROMs

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose													
PAL EQUIV	15	CMOS						5	20		XL16FV8	EXEL	
8x256x8	380 μs	Serial						5	8		24LC16	Microchip	
16x8		Serial						5	8		S2940	Seiko Instr (3621)	
16x16								5	8		KM93C06 KM93C07	Samsung	5
		CMOS						3-5	8		NMC93C06x3	National	
								5	8		ST93C06	SGS-Thomson	
		E ²						5	8		NMC9306 SC22001 SC22002	National Sierra Sierra	10
		Serial						5	8		XL93LC06 XL93LC06-3 NMC93CS06	EXEL EXEL National	
	200							5	8		NMC9307 M9306	National SGS-Thomson	15
	1000	E ²						5.25	14		MCM2801	Motorola	
16x32		Serial						5	8		NMC93CS26 NMC93CS26M	National National	
16x64		Serial						5	8		NMC93CS46 NMC93CS46M	National National	20
32x8		Serial						5	8		S2918	Seiko Instr (3621)	
	150	CMOS						5	18		SC22100	Sierra	
	180	CMOS						5	18		SC22100-1	Sierra	
32x16 + 32x16		CMOS	Sequential					5	8		S-2913C	Seiko Instr	
			Serial	100K	0.001	2	2.7	5	8		S2919C	Seiko Instr (3621)	25
				100K	0.001	2	2.7	5	8		S2919G	Seiko Instr (3621)	
39x8		Serial						5	8		S2961	Seiko Instr (3621)	
64x16								5	8		SC22011 SC22012	Sierra Sierra	
		CMOS						5	8		93C46A 93C46M 59C11 93C46 KM93C46 ST93CS46A ST93C46A	ICT ICT Microchip Microchip Samsung SGS-Thomson SGS-Thomson	30
								5	8		S2919A	Seiko Instr (3621)	35
		Serial	100K	0.001	2	2.7	5	8			CAT32C101	Catalyst Semi (3424)	
		TTL/CMOS	100K	2	1	2	2	8		3-Wire Bus	CAT33C116	Catalyst Semi (3424)	40
		Serial						5	8		XL93CS46-3 XL93LC46 XL93LC46-3 IS93C46 IS93C46-3 NMC9346C S2911 S2914 S2917	EXEL EXEL EXEL ISSI ISSI National Seiko Instr (3621) Seiko Instr (3621) Seiko Instr (3621)	45
								2.5	8		ST93C547	SGS-Thomson	
200	CMOS							2.5-6	8		93CX46	ICT	50
250	CMOS							5	8		XL93C46	EXEL	
									14		NMC95C12	National	
400								-0.3 to 6V					
									8		HY93C46	Hyundai (3531)	
								5	8		93C46	ICT	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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♦ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organiza- tion	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	No. Erase/ Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose												(Cont'd)	
256x16	200	CMOS						5	8		KM35C704	Samsung	(Cont'd)
	500	CMOS						5	8		NMC93C66	National	
	1000	CMOS						5	8		XL90C41	EXEL	
											XL93C66	EXEL	
256x16, 512x27													
27		Serial						5	8		93LC66	Microchip	5
256x16, 512x8		Serial						3	8		CAT33C104	Catalyst Semi	
											CAT33C104I	Catalyst Semi	
								5	8		CAT35C104	Catalyst Semi	
											CAT35C104H	Catalyst Semi	
											CAT35C104I	Catalyst Semi	10
											CAT35C704	Catalyst Semi	
											CAT35C704I	Catalyst Semi	
											CAT35C804A	Catalyst Semi	
											CAT35C804AI	Catalyst Semi	
											CAT35C804B	Catalyst Semi	15
											CAT35C804BI	Catalyst Semi	
27		Serial						5	8		93C66	Microchip	
512x1		CMOS						5	8		SPM28C51C	S-MOS	
512x8		CMOS						5	8		X2404	Xicor	20
								5	8		K24CF04	National	
											K24CF04I	National	
											X24C04I	National	
											μPD6254	NEC	
											ST24C04	SGS-Thomson	25
											PCF8594	Signetics	
											X24C04	Xicor (3770)	
											X24LC04	Xicor	
		CMOS	100K	0.1	3	2.5–5.5	2.5–5.5	8	3-Wire Serial		93LCS66	Microchip	
		TTL/CMOS	100K	1μA	3	5	5	8	Serial I ² C Bus		CAT24C04	Catalyst Semi	
						3–6	3–6	8	Serial I ² C Bus		CAT24LC04	Catalyst Semi	30
		Serial						2.5	8		ST25C04	SGS-Thomson	
10 ms		NMOS						5	8		SDA2546	Siemens	
150		CMOS						5	24		28C04-15	Microchip	
											28C04A-15	Microchip	
180								5	18		SC22104-1	Sierra	35
		CMOS						5	18		NMC98C40-1	National	
200		CMOS						5	24		AT28C04-20	ATMEL	
											28C04-20	Microchip	
											28C04A-20	Microchip	
											μPD28C05-20	NEC (3592)	40
250								5	24		XL2804A-250	EXEL	
											ER5904	Microchip	
											2804A-250	SEEQ	
									24		X2804A-25	Xicor	
		CMOS						5	24		AT28C04-25	ATMEL	45
											28C04-25	Microchip	
											28C04A-25	Microchip	
300								5	18		SC22104	Sierra	
									8		X2404M	Xicor	
									24		X2804A	Xicor	50
											X2804AM	Xicor	
		CMOS						5	24		AT28C04-30M/883	ATMEL	
											NMC98C40	National	
									18		X24C04M	Xicor	
									8				
350								5	24		X2804A-35	Xicor	55
											X2804AM-35	Xicor	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
512x8	350	CMOS						5	24		AT28C04-35M/883	(Cont'd)	
	380 μs	Serial						5	8		24C04A 24LC04 85C92	◊ Microchip Microchip Microchip	
	450							5	24		XL2804A-450 X2804A-45 X2804AM-45	EXEL Xicor Xicor	5
		CMOS						5	24		AT28C04-45M/883	◊ ATMEL	
	650							5	24		HNVM3004	Hughes	
	3500	CMOS	CMOS	100K	0.002	1	5	5	8	Serial I ² C Bus	XL24C04	◊ EXEL	10
							3	3	8	Serial I ² C Bus	XL24C04-3	◊ EXEL	
768		Sequential						5	8		S2980	Seiko Instr (3621)	
1K-Bit		Serial						5	8		BR93CS46	ROHM	
1Kx1	200	CMOS						5	8		NMC9314B MSM16811RS MSM16911RS	National OKI (3599) OKI (3599)	15
	1000	Floating Gate						5	8		SC22056	◊ Sierra	
1Kx8		CMOS	CMOS TTL/CMOS	10K 100K	0.1 1 μA	3 3	2.5–5.5 5	2.5–5.5 5	8 8	2-Wire Serial Serial I ² C Bus	24LC08	‡ Microchip	
				100K			3–6	3–6	8	Serial I ² C Bus	CAT24C08 CAT24LC08	◊ Catalyst Semi (3424) ◊ Catalyst Semi (3424)	20
	10 ms	NMOS						5	8		SDA2586	Siemens	
	650							5	24		HB3108A HC3108A HNVM3008 HNVM3708	Hughes Hughes Hughes Hughes	25
2Kx8		CMOS						5	8		X24C16 X24LC16	Xicor (3770) Xicor	
			CMOS	10K	0.1	3	4.5–5.5	5	8	2-Wire Serial	24C16	‡ Microchip	
			Parallel	100K	0.025	25	4.5	5	24		S2840A	◊ Seiko Instr	
			TTL/CMOS	100K	1 μA	3	5	5	8	Serial I ² C Bus	CAT24C16	◊ Catalyst Semi (3424)	30
		MCOSal	TTL/CMOS	100K	1 μA	3	3–6	3–6	8	Serial I ² C Bus	CAT24LC16	◊ Catalyst Semi (3424)	
		Serial						5	8		ST24C16	SGS-Thomson	
	25							5	24		36C16-35	* SEEQ	
		CMOS						5	24		AT28HC191-35 AT28HC291-35	ATMEL ATMEL	35
	45	CMOS						5	24		AT28HC16-45 AT28HC191-45 AT28HC291-45 M36C16-45 M38C16-45 36C16-45	◊ ATMEL ATMEL ATMEL * SEEQ * SEEQ * SEEQ	40
	55							5	24		XL46C15-55	EXEL	
		CMOS						5	24		AT28HC16-55 AT28HC16L-55	◊ ATMEL ◊ ATMEL	45
											AT28HC191-55 AT28HC291-55 M36C16-55 M38C16-55	ATMEL ATMEL * SEEQ * SEEQ	
	60	CMOS						5	24		XL46C15-60	EXEL	
	70	CMOS						5	24		AT28HC16-70 AT28HC16L-70	◊ ATMEL ◊ ATMEL	50
											XL46C15-70	EXEL	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
2Kx8	85	CMOS						5	24		XL46C15-85	EXEL	(Cont'd)
	90	CMOS						5	24		AT28HC16-90 ♦ AT28HC16L-90 ♦	ATMEL ATMEL	
	100	CMOS						5	24		XL28C16A XL28C16B-100	EXEL EXEL	5
	150	CMOS						5	24		X2816B AT28C16-15 ♦ AT28C17-15 ♦ XL28C16B-150 28C17-15 ♦ 28C17A-15	Xicor (3758) ATMEL ATMEL EXEL Microchip Microchip	10
								24			MSM28C16-15RS KM28C16-15	OKI (3599) Samsung	
								28			KM28C17-15	Samsung	
		E ²						5	24		28C16A-15	Microchip	15
	200							5	24		2816A-2 2816B-1	Intel Intel	
									28		2817A-1 2817A-2	Intel Intel	
									24		NMC9816A-20 M2816A-200 ♦	National SEEQ	20
									28		2817A-200 2817AH-200	SEEQ SEEQ	
									24		52B13-200 52B13H-200	SEEQ SEEQ	25
									28		5517AH	SEEQ	
		CMOS						5	24		AT28C16-20 AT28C17-20 ♦ CAT28C16A-20 CAT28C16AI-20	ATMEL ATMEL Catalyst Semi Catalyst Semi	
									28		CAT28C17A-20 CAT28C17AI-20	Catalyst Semi (3424) Catalyst Semi (3424)	30
									24		XL28C16A-200 XL28C16B-200 28C16A-20	EXEL EXEL Microchip	35
									28		28C17-20 ♦ 28C17A-20	Microchip Microchip	
									24		MSM28C16-20RS KM28C16-20	OKI (3599) Samsung	
									28		KM28C17-20	Samsung	40
									24		X2816C-20	Xicor (3758)	
		E ²						5	28		XL2817A-200	EXEL	
		NMOS						5	28		M2817A-200	SEEQ	
		Parallel						5	24		S2816 S2817 S2840	Seiko Instr Seiko Instr Seiko Instr	45
									24		S2864	(3621) Seiko Instr	
	250							5	24		XL2816A-250 XL2817A-250 M2816A M2817A-25 2816A 2816B 2816B-2 2816B-25	EXEL EXEL Intel Intel Intel Intel Intel Intel	50
									28		2817A-25	Intel	55
									24		NMC9816A-25 R5213-25 R5516A-25 2816A-250 ♦ 52B13-250	National Rockwell Rockwell SEEQ SEEQ	60

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line																																																																																																																																																																																																																																																																																																																																																																																																																																								
Electrically Erasable—General Purpose											(Cont'd)																																																																																																																																																																																																																																																																																																																																																																																																																																										
2Kx8	250								5	24	52B13H-250	SEEQ	(Cont'd)																																																																																																																																																																																																																																																																																																																																																																																																																																								
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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Electrically Erasable—General Purpose											(Cont'd)			
2Kx8	350	NMOS						5	24		M52B13-350	SEEQ	(Cont'd)	
											M52B13H-350	SEEQ		
	450							5	24		XL2816A-450	EXEL	5	
											M2817	Intel		
											2815-4	Intel		
											2816-4	Intel		
											2816A-4	Intel		
											X2816AM-45	Xicor		
		CMOS							5	24		AT28C16-45	◊ ATMEL	10
												AT28C17-45	◊ ATMEL	
700	Parallel							5	32		CAT28C16V3	Catalyst Semi (3424)		
3500	CMOS	CMOS	100K	0.002	1	5 3	5 3	8 8	Serial I ² C Bus Serial I ² C Bus	XL24C16 XL24C16-3	◊ EXEL ◊ EXEL			
4Kx1	1000	Floating Gate						5	8		SC22057	◊ Sierra		
4Kx8	35	Serial CMOS						5	8		CAT33C704	Catalyst Semi	15	
											36C32-35	SEEQ		
	45	CMOS						5	24		36C32-45	SEEQ		
											38C32-45	SEEQ		
	55	CMOS						5	24		36C32-55	SEEQ	20	
											38C32-55	◊ SEEQ		
	300							5	28		NCR52832	NCR		
4Kx16		Serial						5	8		CAT33C804	Catalyst Semi (3425)		
8Kx8	45	CMOS						5	28		EE64K8-45	Lattice	25	
	55							5	28		EE64K8-55	Lattice		
								5	28		AT28HC64-55	ATMEL		
	60	CMOS						5	28		M38C64-60	SEEQ	30	
											X2864H-70	◊ Xicor		
	70	CMOS						5	28		AT28HC64-70	◊ ATMEL		
											AT28HC64L-70	ATMEL		
	90	CMOS						5	28		STK28C64-70	Simtek	35	
											X2864H-90	◊ Xicor		
											AT28HC64-90	◊ ATMEL		
	120	CMOS						5	28		AT28HC64L-90	◊ ATMEL	40	
											STK28C64-90	Simtek		
											X2864B-12	◊ Xicor		
											X2864BM-12	◊ Xicor		
	150	CMOS						5	28		AT28HC64-12	◊ ATMEL	45	
											AT28HC64L-12	◊ ATMEL		
											STK28C64-12	Simtek		
											X28C64-12	Xicor (3759)		
											X28C64B-12	Xicor (3759)		
											XL48C64-150	EXEL		
X2864B-15											◊ Xicor			
X2864BM-15											◊ Xicor			
AT28C64-15											◊ ATMEL			
AT28PC64-15											◊ ATMEL			
CAT28C64A-15	Catalyst Semi (3424)													
180	CMOS						5	28		XL28C64-150	EXEL	50		
										XL28C64B-150	EXEL			
										28C64A-15	Microchip			
										MSM28C64-15RS	OKI (3599)			
										X28C64	Xicor			
										X28C64-15	Xicor (3759)			
										X28C64B-15	Xicor (3759)			
										X28C64BM-15	Xicor (3759)			
X28C64M-15	◊ Xicor (3759)													
60	CMOS							5	28		X2864B-18	◊ Xicor	60	
											X2864BM-18	◊ Xicor		

(Continued)

† Mil Temp Range (−55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
8Kx8	180	CMOS						5	28		X28C64-18	Xicor (3759)	5
											X28C64B-18	Xicor (3759)	
	200	CMOS									X28C64BM-18	Xicor (3759)	
											X28C64M-18	Xicor	
											XL2864A-200	EXEL	
											XL2865A-200	EXEL	
											XL48C64-200	EXEL	
											R52B33-2	Rockwell	
											52B33H-200	SEEQ	
											X2864AM-25	Xicor	
	250	CMOS									AT28C64-20	ATMEL	10
											AT28PC64-20	ATMEL	
											CAT28C64A-20	Catalyst Semi (3424)	
											CAT28C65A-20	Catalyst Semi (3424)	
											XL28C64-200	EXEL	
											XL28C64B-200	EXEL	
											HN58C65-20	Hitachi	
											28C64A-20	Microchip	
											MSM28C64-20RS	OKI (3599)	
											KM28C64-20	Samsung	
	250	NMOS									KM28C65-20	Samsung	20
											28C64-200	SEEQ	
											55C65-200	SEEQ	
											5962-86830	SEEQ	
											5962-87514	SEEQ	
											X28C64-20	Xicor (3759)	
											X28C64M	Xicor (3759)	
											X28C64M-20	Xicor	
											AM2864BE-200	AMD	
											52B33-200	SEEQ	
	250	NMOS									AM9864-20C	AMD	30
											XL2864A-250	EXEL	
											XL2865A-250	EXEL	
											XL48C64-250	EXEL	
											M2864A-25	Intel	
											2864A-25	Intel	
											M2864H-250	SEEQ	
											52B33H-250	SEEQ	
											X2864A-25	Xicor	
											DS1217A-64	Dallas	
	250	Cartridge CMOS									AT28C64-25	ATMEL	40
											AT28PC64-25	ATMEL	
											CAT28C64A-250	Catalyst Semi (3424)	
											CAT28C65A-250	Catalyst Semi (3424)	
											XL28C64-250	EXEL	
											XL28C64B-250	EXEL	
											MBM28C64-25	Fujitsu	
											MBM28C65-25	Fujitsu	
											HN58C65-25	Hitachi	
											28C64A-25	Microchip	
	250	NMOS									KM28C64-25	Samsung	50
											KM28C65-25	Samsung	
											M28C64-250	SEEQ	
											TMS28C64-25	TI	
											X28C64-25	Xicor (3759)	
											X28C64M-25	Xicor	
											AM2864BE-250	AMD	
											M2864-250	SEEQ	
											2864-250	SEEQ	
											2864-350	SEEQ	
	250	NMOS									2864H-250	SEEQ	60
											52B33-250	SEEQ	
											AM9864-25C	AMD	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose													(Cont'd)
8Kx8	300							5	28		XL2864A-300	EXEL	5
											XL2865A-300	EXEL	
											M2864A-30	Intel	
											2864A-30	Intel	
											R52B33-3	Rockwell	
											M52B33-300	SEEQ	
											28C64-250	SEEQ	
											52B33H-300	SEEQ	
											X2864A	* Xicor	
											X2864AM	* Xicor	
	CMOS							5	28		AT28C64-30M/883	ATMEL	10
											AT28PC64-30	ATMEL	
											52B33-300	SEEQ	
											AM2864BE-300	* AMD	
											XLM2864A-300	EXEL	
											XLM2865A-300	EXEL	
											M2864H-300	SEEQ	
											M52B33H-300	SEEQ	
											2864-300	SEEQ	
											2864H-300	SEEQ	
	E ² NMOS							5	28		AM9864-30C	* AMD	20
											XL2864A-350	EXEL	
											XL2865A-350	EXEL	
											2864A-35	Intel	
											X2864A-35	* Xicor	
											X2864AM-35	* Xicor	
											AT28C64-35M/883	ATMEL	
											AT28PC64-35	ATMEL	
											MBM28C64-35	Fujitsu	
											MBM28C65-35	Fujitsu	
											TMS28C64-35	Ti	
16Kx8x4 32Kx8	150	CMOS						5	28		X28C64T-25	Xicor (3759)	30
											XL2864A-350	EXEL	
											XL2865A-350	EXEL	
											52B33-350	SEEQ	
											AM9864-35C	* AMD	
											XL2864A-450	EXEL	
	35	NVS RAM						5	28		XL2865A-450	EXEL	40
											X2864A-45	* Xicor	
											X2864AM-45	* Xicor	
											AT28C64-45M/883	ATMEL	
											X28C64T-35	Xicor (3759)	
											XL2864A-450	EXEL	
	55	CMOS						5	28		XL2865A-450	EXEL	45
											GR27513	Greenwich	
											bq4011H-35	Benchmark	
											PUMA2E256-55	Mosaic Semi	
											AT28HC256-70	ATMEL	
											PUMA2E256-70	Mosaic Semi	
	70	CMOS						5	28		STK28C256-70	Simtek	50
											MEM832-85	Mosaic Semi	
											AM28F256	AMD	
											AT28HC256-90	ATMEL	
											AT28HC256L-90	ATMEL	
											PUMA2E256-90	Mosaic Semi	
	85	CMOS						5	28		28C256A-200	SEEQ	55
											STK28C256-90	Simtek	
											STK28C256-90M	Simtek	
												* Simtek	
												(Continued)	
	90	CMOS						5	28				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
32Kx8	100	CMOS						5	28		MEM832-10 28HC256-90 ♦ SEEQ	Mosaic Semi	5
	120	CMOS						5	28		AT28HC256-12 AT28HC256L-12 XL28F256-120 EXEL MEM832-12 Mosaic Semi	ATMEL ATMEL EXEL Mosaic Semi	
								66 28			PUMA2E256-12 Mosaic Semi 28HC256-120 ♦ SEEQ STK28C256-12 Simtek STK28C256-12M ♦ Simtek	Mosaic Semi SEEQ Simtek Simtek	
	150	CMOS						5	28		AT28C256-15 ♦ ATMEL XL28C256-150 EXEL MEM832-15 Mosaic Semi	ATMEL EXEL Mosaic Semi	
											KM28C256 Samsung KM28C256-15 Samsung	Samsung Samsung	
								32 28			KM28C256J Samsung 28C256A-150 ♦ SEEQ STK28C256-15M X28C256 ♦ Xicor X28C256-15 ♦ Xicor X28C256M-15 ♦ Xicor (3761)	Samsung SEEQ Simtek Xicor Xicor Xicor	20
		NMOS						5	28		X28C256B-15 ♦ Xicor	Xicor	
	170	CMOS						5	28		TC58257A-17 Toshiba X28C256-18 ♦ Xicor X28C256M-18 ♦ Xicor (3761)	Toshiba Xicor Xicor	
	180	CMOS						5	28				25
		NMOS						5	28		X28C256B-18 ♦ Xicor	Xicor	
	200	CMOS						5	28		AT28C256-20 ♦ ATMEL CAT28C256-20 Catalyst Semi (3424) CAT28C256I-20 Catalyst Semi (3424) CAT28C256M-20 Catalyst Semi (3424) XL28C256-200 EXEL MEM832-20 Mosaic Semi	ATMEL Catalyst Semi (3424) Catalyst Semi (3424) Catalyst Semi (3424) EXEL Mosaic Semi	
											μPD28C256-20 NEC (3592) KM28C256-20 Samsung 28C256-200 SEEQ 55C256-200 ♦ SEEQ 5962-88525 ♦ SEEQ X28C256-20 ♦ Xicor X28C256I-20 ♦ Xicor (3761) X28C256M-20 ♦ Xicor (3761)	NEC (3592) Samsung SEEQ SEEQ SEEQ Xicor Xicor (3761) Xicor (3761)	40
	250							5	28		X28C256-25 ♦ Xicor X28C256M-25 ♦ Xicor (3761) X28256-25 ♦ Xicor X28256M-25 ♦ Xicor	Xicor Xicor (3761) Xicor Xicor	
		Cartridge						5	30		DS1217A-192 Dallas DS1217A-256 Dallas	Dallas Dallas	
		CMOS						5	28		AT28C256-25 ♦ ATMEL CAT28C256-25 Catalyst Semi (3424) CAT28C256I-25 Catalyst Semi (3424) CAT28C256M-25 Catalyst Semi (3424) XL28C256-250 EXEL MEM832-25 Mosaic Semi	ATMEL Catalyst Semi (3424) Catalyst Semi (3424) Catalyst Semi (3424) EXEL Mosaic Semi	50
											KM28C256-25 Samsung M28C256-250 SEEQ 28C256-250 SEEQ TC58257A-25 Toshiba 8023 White Tech	Samsung SEEQ SEEQ Toshiba White Tech	
											X28C256I-25 ♦ Xicor	Xicor	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
32Kx8	300	CMOS						5	28		X28C256M * Xicor (3761)	5	(Cont'd)
											X28256 * Xicor		
	350	CMOS						5	28		AT28C256-30 * ATMEL		
											CAT28C256-30 Catalyst Semi (3424)		
											CAT28C256-30 Catalyst Semi (3424)		
32Kx16	150	CMOS Module						5	40		CAT28C256-30 Catalyst Semi (3424)	10	
											CAT28C256-30 Catalyst Semi (3424)		
	300	CMOS						5	28		CAT28C256M-30 Catalyst Semi		
											28C256-300 SEEQ		
											X28C256I * Xicor (3761)		
64Kx4	90	CMOS						5	32		X28256M * Xicor	15	
											X28C256-35 * Xicor		
	100	CMOS						5	32		X28C256M-35 * Xicor (3761)		
											X28256M-35 * Xicor		
											X28256M-35 * Xicor		
64Kx8	120	CMOS						5	40		AT28C256-35 * ATMEL	20	
											AT28C256-35 * ATMEL		
	150	CMOS						5	40		MEM864-90 Mosaic Semi		
											AM28F512-90 AMD		
											MEM864-12 Mosaic Semi		
64Kx16	200	CMOS						5,12	32		AT28C1024-15 ATMEL	25	
											GR27512 Greenwich		
	250	CMOS						5	40		MEM864-15 Mosaic Semi		
											AT28C1024-20 ATMEL		
											AT281024-20 ATMEL		
128Kx8	300	CMOS						5,12	32		X28C512M-20 * Xicor (3764)	30	
											48F512-200 SEEQ		
	350	CMOS						5	40		AT28C1024-20 ATMEL		
											AT281024-20 ATMEL		
											X28C512M-25 * Xicor (3764)		
128Kx16	70	CMOS						5	66		48F512-250 SEEQ	35	
											DS1217M-1/2 Dallas		
	90	CMOS						5	30		AT28C1024-25 ATMEL		
											X28C512M-25 * Xicor (3764)		
											AT28C1024-25 ATMEL		
256Kx8	120	CMOS						5	32		48F512-300 SEEQ	40	
											48F512-300 SEEQ		
	150	CMOS						5	32		PUMA2E1000-70 Mosaic Semi		
											PUMA2E1000-90 Mosaic Semi		
											AM28F010-90 AMD		
256Kx16	200	CMOS						5,12	32		AT28MC010-12 ATMEL	45	
											PUMA2E1000-12 Mosaic Semi		
	250	CMOS						5	32		28C010-120 * SEEQ		
											AT28C010-15 ATMEL		
											AT28MC010-15 ATMEL		
512Kx8	300	CMOS						5,12	32		XL28F010-150 EXEL	50	
											GR27010 Greenwich		
	350	CMOS						5	30		PUMA2E1000-15 Mosaic Semi		
											28C010-150 * SEEQ		
											WE128K8-150 White Tech		
1Mx8	400	CMOS						5,12	32		48F010-200 SEEQ	55	
											AT28C010-20 ATMEL		
	450	CMOS						5	32		AT28MC010-20 ATMEL		
											ME8128-20 Mosaic Semi		
											PUMA2E1000-20 Mosaic Semi		
2Mx8	500	CMOS						5,12	32		28C010-200 * SEEQ	60	
											X28C010M-20 Xicor (3765)		
	550	CMOS						5	30		48F010-250 SEEQ		
											DS1217M-1 Dallas		
											AT28C010-25 ATMEL		
4Mx8	600	CMOS						5,12	32		AT28MC010-25 ATMEL	65	
											ME8128-25 Mosaic Semi		
	650	CMOS						5	32		PUMA2E1000-25 Mosaic Semi		
											8090 White Tech		
											X28C010M-25 Xicor (3765)		
8Mx8	700	CMOS						5,12	32		48F010-300 SEEQ	70	
											ME8128-30 Mosaic Semi		
	750	CMOS						5	32		X28C010M-30 Xicor (3765)		
											(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—General Purpose											(Cont'd)		
128Kx8	350	CMOS						5	32		ME8128-35 X28C010M-35	Mosaic Semi Xicor (3765)	(Cont'd)
128Kx32		CMOS						5	76		M4194E	White Tech	
256Kx8	150 250	CMOS Cartridge						5 5	32 30		WE256K8-150 DS1217M-2	White Tech Dallas	5
256Kx16		CMOS						5	76		M4194E	White Tech	
512Kx8	150 250	CMOS CMOS Cartridge						5 5 5	76 32 30		M4194E WE512K8-150 DS1217M-4	White Tech White Tech Dallas	
Electrically Erasable—Modules													
512x8	250 300 350	Module						5 5 5	38 24 24		COB65404EE XL2804A-300 XL2804A-350	Microchip EXEL EXEL	10
2Kx8	250	Module						5	38		COB65416EE	Microchip	
8Kx16	70	CMOS Module						5	40		DPE8M628-70 DPE8X16A-70	Dense-Pac Dense-Pac	15
	90	CMOS Module						5	40		DPE8M628-90 DPE8X16A-90	Dense-Pac Dense-Pac	
	120	CMOS Module						5	40		DPE8M628-120 DPE8X16A-120	Dense-Pac Dense-Pac	
	150 200	CMOS Module CMOS Module						5 5	40 40		DPE8X16A-150 DPE8X16A-200 DPE8X16A-250	Dense-Pac Dense-Pac Dense-Pac	20
8Kx32	55 70 90 120 150 200	Module Module Module Module Module Module						5 5 5 5 5 5	66 66 66 66 66 66		DPE832V-55 DPE832V-70 DPE832V-90 DPE832V-120 DPE832V-150 DPE832V-200	Dense-Pac Dense-Pac Dense-Pac Dense-Pac Dense-Pac Dense-Pac	25
16Kx8	70 90 120 150 200 250	CMOS Module CMOS Module CMOS Module CMOS Module CMOS Module CMOS Module						5 5 5 5 5 5	40 40 40 40 40 440		DPE8X16A-70 DPE8X16A-90 DPE8X16A-120 DPE8X16A-150 DPE8X16A-200 DPE8X16A-250	Dense-Pac Dense-Pac Dense-Pac Dense-Pac Dense-Pac Dense-Pac	30
16Kx16	55 70	Module CMOS Module						5 5	66 40		DPE832V-55 DPE8M656-70 DPE832V-70	Dense-Pac Dense-Pac Dense-Pac	35
	90	CMOS Module Module						5 5	40 66		DPE8M656-90 DPE832V-90	Dense-Pac Dense-Pac	
	120	CMOS Module						5	40		DPE8M656-120 DPE832V-120	Dense-Pac Dense-Pac	40
	150 200	Module Module						5 5	66 66		DPE832V-150 DPE832V-200	Dense-Pac Dense-Pac	
32Kx8	55 70	Module Module						5 5	66 66		DPE832V-55 DPE832-70 DPE832V-70	Dense-Pac Dense-Pac Dense-Pac	45
	90	Module						5	28 66		DPE41257-90 DPE832V-90	Dense-Pac Dense-Pac	
	120	Module						5	28		DPE41257-120 DPE832V-120	Dense-Pac Dense-Pac	50
	150	Module						5	28		DPE41257-150	Dense-Pac	
	150 nsf 200	Module Module						5 5	66 66		DPE832V-150 DPE832V-200	Dense-Pac Dense-Pac	
32Kx16	70 90	CMOS Module CMOS Module						5 5	32 32		DPE32X16A-70 DPE32X16A-90	Dense-Pac Dense-Pac	55
		Module						5	40		DPE8M612-90	Dense-Pac	(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—Modules											(Cont'd)		
32Kx16	100	Module						5	40		DPE8M612-100	(Cont'd)	5
	120	CMOS Module						5	40		DPE32X16A-120	Dense-Pac	
		Module						5	40		DPE8M612-120	Dense-Pac	
	150	CMOS Module						5	40		DPE8M612-150	Dense-Pac	
	170	CMOS Module						5	40		DPE8M612-170	Dense-Pac	
	200	CMOS Module						5	40		DPE32X16A-200	Dense-Pac	
											DPE8M612-200	Dense-Pac	
	250	CMOS Module						5	40		DPE32X16A-250	Dense-Pac	
											DPE8M612-250	Dense-Pac	
32Kx32	25	CMOS	TTL/CMOS					5	5	66	DPE3232V-25 †	Dense-Pac	10
	70	Module	10K					5	5	66	DPE3232V-70	Dense-Pac	
	90	Module						5	5	66	DPE3232V-90	Dense-Pac	
	120	Module						5	5	66	DPE3232V-120	Dense-Pac	
	147	CMOS	TTL/CMOS					5	5	66	DPE3232V-17 †	Dense-Pac	15
	150	Module	10K					5	5	66	DPE3232V-150	Dense-Pac	
	200	CMOS	TTL/CMOS					5	5	66	DPE3232V-20 †	Dense-Pac	
	300	CMOS	TTL/CMOS					5	5	66	DPE3232V-30 †	Dense-Pac	
	350	CMOS	TTL/CMOS					5	5	66	DPE3232V-35 †	Dense-Pac	20
			10K					5	5	66	DPE3232V-35 †	Dense-Pac	
64Kx8	90	CMOS Module						5	40		DPE32X16A-90	Dense-Pac	25
		Module						5	32		DPE5648-90	Dense-Pac	
	100	Module						5	32		DPE4648-100 †	Dense-Pac	
	120	CMOS Module						5	40		DPE32X16A-120	Dense-Pac	
									32		DPE5648-120	Dense-Pac	30
		Module						5	32		DPE4648-120 †	Dense-Pac	
	150	CMOS Module						5	40		DPE32X16A-150	Dense-Pac	
									32		DPE5648-150	Dense-Pac	
	170	CMOS Module						5	40		DPE32X16A-170	Dense-Pac	35
									32		DPE5648-170	Dense-Pac	
	200	CMOS Module						5			DPE32X16A-200	Dense-Pac	
									32		DPE4648-200	Dense-Pac	
											DPE5648-200	Dense-Pac	40
	250	CMOS Module						5	40		DPE32X16A-250	Dense-Pac	
									32		DPE5648-250	Dense-Pac	
	170	CMOS Module						5	32		DPE4648-170	Dense-Pac	45
	250	CMOS Module						5	32		DPE4648-250	Dense-Pac	
64Kx16	70	Module						5	66		DPE3232V-70	Dense-Pac	50
	90	Module						5	66		DPE3232V-90	Dense-Pac	
									40		DPE8M624-90 †	Dense-Pac	
	100	Module						5	40		DPE8M624-100	Dense-Pac	
											DPE3232V-120	Dense-Pac	55
	120	Module						5	66		DPE8M624-120	Dense-Pac	
									40		DPE8M624-120	Dense-Pac	
	150	CMOS Module						5	32		DPE8M624-150	Dense-Pac	
		Module							66		DPE3232V-150	Dense-Pac	55
	170	CMOS Module						5	40		DPE8M624-170	Dense-Pac	
	200	CMOS Module						5	40		DPE8M624-200	Dense-Pac	
	250	CMOS Module						5	40		DPE8M624-250	Dense-Pac	
64Kx32	120	Module						5	60		DPE6434-120 †	Dense-Pac	50
	150	Module						5	60		DPE6434-150 †	Dense-Pac	
	170	CMOS Module						5	60		DPE6434-170	Dense-Pac	
	200	CMOS Module						5	60		DPE6434-200	Dense-Pac	
	250	CMOS Module						5	60		DPE6434-250	Dense-Pac	
128Kx8	70	Module						5	66		DPE3232V-70	Dense-Pac	55
	90	Module						5	66		DPE3232V-90	Dense-Pac	
									32		DPE41288-90 †	Dense-Pac	
											DPE51288-90 †	Dense-Pac	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog. Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—Modules (Cont'd)													
128Kx8	100	Module						5	32		DPE41288-100 DPE51288-100	◊ Dense-Pac	5
	120	Module						5	66 32		DPE3232V-120 DPE41288-120 DPE51288-120	Dense-Pac ◊ Dense-Pac ◊ Dense-Pac	
	150	Module						5	66 32		DPE3232V-150 DPE51288-150	Dense-Pac ◊ Dense-Pac	
	200	CMOS Module						5	32		DPE41288-200 DPE51288-200	◊ Dense-Pac ◊ Dense-Pac	
	250	CMOS						5	32		XM28C010-25 Xicor (3779) XM28C010M-25 Xicor (3779)		
		CMOS Module						5	32		DPE41288-250 DPE51288-250 XM28C010	◊ Dense-Pac ◊ Dense-Pac Xicor	10
	300	CMOS						5	32		XM28C010M Xicor (3779) DPE41288-300		15
		CMOS Module						5	32		DPE51288-300	◊ Dense-Pac	
	350	CMOS Module						5	32		DPE41288-350 DPE51288-350	◊ Dense-Pac ◊ Dense-Pac	
128Kx16	90	TTL						5	60		DPE6434-90	Dense-Pac	20
	100	Module						5	60		DPE6434-100	◊ Dense-Pac	
	120	Module						5	60		DPE6434-120	◊ Dense-Pac	25
	150	Module						5	60		DPE6434-150	◊ Dense-Pac	
	170	CMOS Module						5	60		DPE6434-170	Dense-Pac	
	200	CMOS Module						5	60		DPE6434-200	Dense-Pac	
	250	CMOS Module						5	60		DPE6434-250	Dense-Pac	
128Kx32	120	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-12 † Dense-Pac		30
	150	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-15 † Dense-Pac		
	170	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-17 † Dense-Pac		
	200	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-20 † Dense-Pac		
	250	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-25 † Dense-Pac		
	300	CMOS	TTL/CMOS 10K				5	5	66	PGA	DPE128X32V-30 † Dense-Pac		
256Kx8		4250 nsF						5	32		DPE256S8N-250	Dense-Pac	35
	70	Module						5	42		DPE256Q8-70	Dense-Pac	
	90	Module						5	42		DPE256Q8-90	Dense-Pac	
	100	Module						5	42		DPE256Q8-100	Dense-Pac	
	120	Module						5	66 60		DPE256Q8-120 DPE6434-120	Dense-Pac ◊ Dense-Pac	
	135	CMOS Module						5	32		DPE256S8N-135 DPE256S8N-150	Dense-Pac Dense-Pac	40
	150	Module						5	42 60		DPE256Q8-150 DPE6434-150	Dense-Pac ◊ Dense-Pac	
	170	CMOS Module						5	32 60		DPE256S8N-170 DPE6434-170	Dense-Pac Dense-Pac	
												(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—E² PROMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	No. Erase/Write Cycles	Max Standby Current (mA)	Max Active Current (mA)	Prog Voltage (V)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Electrically Erasable—Modules												(Cont'd)	
256Kx8	200	CMOS Module						5	32		DPE256S8N-200	Dense-Pac	5
		Module							60		DPE6434-200	Dense-Pac	
	250	Module						5	42		DPE256Q8-200	Dense-Pac	
		CMOS Module						5	60		DPE6434-250	Dense-Pac	
		Module						5	42		DPE256Q8-250	Dense-Pac	
	300	Module						5	42		DPE256Q8-300	Dense-Pac	
256Kx16	150	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-15	† Dense-Pac	10
	170	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-17	† Dense-Pac	
	200	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-20	† Dense-Pac	
	250	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-25	† Dense-Pac	
	300	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-30	† Dense-Pac	
	512Kx8	Module						5	48		DPE45128-100	◊ Dense-Pac	
		Module						5	48		DPE45128-120	◊ Dense-Pac	
	135	CMOS Module						5	32		DPE512S8N-135	Dense-Pac	
	150	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-15	† Dense-Pac	
	170	Module						5	32		DPE512S8N-150	Dense-Pac	
		Module						5	56		DPE45128-150	Dense-Pac	
512Kx16	120	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-12	† Dense-Pac	25
	200	Module						5	48		DPE45128-200	◊ Dense-Pac	
		Module						5	32		DPE45128-250	◊ Dense-Pac	
	250	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-25	† Dense-Pac	
	300	Module						5	32		DPE512S8N-200	Dense-Pac	
		Module						5	48		DPE45128-200	◊ Dense-Pac	
	512Kx16	Module						5	32		DPE512S8N-150	Dense-Pac	
		Module						5	56		DPE45128-150	Dense-Pac	
	170	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-17	† Dense-Pac	
	200	CMOS	TTL/CMOS	10K			5	5	66	PGA	DPE128X32V-20	† Dense-Pac	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose												
16Mx1	50	CMOS					5	28		MT4C10016-5 MT4C10017-5	◊ MicronTech ◊ MicronTech	5
	60	CMOS					5	28		MT4C10016-6 MT4C10017-6	◊ MicronTech ◊ MicronTech	
				Fast Page 2	90	5	24			MB116100-60 MB8116101-60	◊ Fujitsu ◊ Fujitsu (3472)	
			TTL	Fast Page	11/5.5	110	5	24		MB8116100-60	◊ Fujitsu (3471)	
	70	CMOS					5	28		MT4C10016-7 MT4C10017-7	◊ MicronTech ◊ MicronTech	
				Fast Page 2	90	5	24			MB8116101-70	◊ Fujitsu (3472)	10
			TTL	Fast Page	1	80	5	24	2K Refresh	μPD4217100-70	◊ NEC (3591)	
					11/5.5	99	5	24		MB8116100-70	◊ Fujitsu (3471)	
	80	CMOS					5	28		MT4C10016-8 MT4C10017-8	◊ MicronTech ◊ MicronTech	15
				Fast Page 2	90	5	24			MB8116101-80	◊ Fujitsu (3472)	
			TTL	Fast Page	1	80	5	24	4K Refresh	μPD4216100-80	◊ NEC (3591)	
									2K Refresh	μPD4217100-80	◊ NEC (3591)	
					11/5.5	88	5	24		MB8116100-80	◊ Fujitsu (3471)	20
	100	CMOS	TTL	Fast Page	1	60	5	24	4K Refresh	μPD4216100-10	◊ NEC (3591)	
					2	80	5	24	2K Refresh	μPD4217100-10	◊ NEC	
256Kx3	100	NMOS					5	26		413256-100	Micro-C (3578)	
256x4	5	10K/10KH ECL					-4.5	24		CY10E422L-5C	◊ Aspen	25
	7	10K/10KH ECL					-4.5	24		CY10E422L-7C	◊ Aspen	
265Kx4	100	CMOS					5	20		MDM4256-10	Mosaic Semi	
	120	CMOS					5	20		MDM4256-12	Mosaic Semi	25
	150	CMOS					5	20		MDM4256-15	Mosaic Semi	
512x512x4	100	CMOS					5	28		MSM514221-10	◊ OKI (3599)	30
	120	CMOS					5	28		MSM514221-12	◊ OKI (3599)	
910x263x4	40	CMOS					5	28		μPD42270	◊ NEC (3591)	
1Kx4	60	CMOS					5	26		TMS44400-60	◊ TI	30
										TMS44410-60	◊ TI	
										TMS44400-70	◊ TI	
	70	CMOS					5	26		TMS44410-70	◊ TI	35
	80	CMOS					5	26		TMS44410-80	◊ TI	
	100	CMOS					5	26		TMS44410-10	◊ TI	
	120	CMOS					5	18		HM6514S/883	◊ Harris	
4Kx1	60	CMOS					5	26		TMS44100-60	◊ TI	40
										TMS44101-60	◊ TI	
	70	CMOS					5	26		TMS44100-70	◊ TI	
										TMS44101-70	◊ TI	40
	80	CMOS					5	26		TMS44101-80	◊ TI	
4Kx4	60	CMOS					5	28		TMS416400-60	◊ TI	45
	70	CMOS					5	28		TMS416400-70	◊ TI	
	80	CMOS					5	28		TMS416400-80	◊ TI	
										TMS416400-10	◊ TI	
	100	CMOS					5	28		TMS416400-10	◊ TI	
16Kx1	60	CMOS					5	28		TMS416100-60	◊ TI	50
	70	CMOS					5	28		TMS416100-70	◊ TI	
	80	CMOS					5	28		TMS416100-80	◊ TI	
	100	CMOS					5	28		TMS416100-10	◊ TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
16Kx1	120	NMOS					± 5,12	16		4116-12	Krueger (3548)	
	150	NMOS					± 5,12	16		4116-15	Krueger (3548)	
	200	NMOS					± 5,12	16		4116-20	Krueger	
16Kx4	20	CMOS					5	24		P4C198A-20C P4C198A-20M	Performance Performance	5
	120	NMOS					5	18		SMJ4416-12	† TI	
	150	NMOS					5	18		MN4264-15	Panasonic	
	200	NMOS					5	18		SMJ4416-15	† TI	
16Kx8	120	CMOS					5	28		SMJ27C128-12	† TI	10
	150	CMOS					5	28		SMJ27C128-15	† TI	
	170	CMOS					5	28		SMJ27C128-17	† TI	
	250	CMOS					5	28		SMJ27C128-25	† TI	
32Kx8	85						5	28		GM76C256-85	◊ GoldStar	15
	150	CMOS					5	28		SMJ27C256-15	† TI	
	170	CMOS					5	28		SMJ27C256-17	† TI	
	250	CMOS					5	28		SMJ27C256-25	† TI	
32Kx8x4	20	CMOS, Field Memory					5	40		TC521000	◊ Toshiba	
64Kx1	25	CMOS					5	22		IDT7187L-25	◊ ‡ IDT	20
	100	NMOS					5	16		MT4264-10	◊ MicronTech	
	120	NMOS					5	16		KM4164B-10	Samsung	25
										MT4264-12	◊ MicronTech	
										NMC4164-12	National	
										MSM3764A-12	OKI	
										MN4164-12A	Panasonic	30
										KM4164B-12	Samsung	
										MKB45H64-81	† SGS-Thomson	35
										SMJ4164-12	◊ ‡ TI	
64Kx1		NMOS, Refurbished					5	16		4164-120	Krueger (3548)	40
	150	NMOS					5	20		V64KX1-15	Micro-C	
								16		MT4264-15	MicronTech	35
										NMC4164-15	National	
										MSM3764A-15	OKI	
										MN4164-15A	Panasonic	
										KM4164B-15	Samsung	40
										MKB45H64-82	† SGS-Thomson	
										TS4164-15	SGS-Thomson	45
								20		SMJ4161-15	† TI	
64Kx1								16		SMJ4164-15	◊ ‡ TI	40
		NMOS, Refurbished					5	16		4164-150	Krueger (3548)	
	200	NMOS					5	16		NMC4164-20	National	45
										MKB45H64-83	† SGS-Thomson	
										TS4164-20	SGS-Thomson	
								20		SMJ4161-20	† TI	
								16		SMJ4164-20	◊ ‡ TI	50
		NMOS, Refurbished					5	16		4164-200	Krueger (3548)	
	70	CMOS					5	24		HY53C464-70	Hyundai (3531)	50
								18		HY53C464L-70	Hyundai	
										KM41C464-07	◊ Samsung	
										KM41C466-07	◊ Samsung	

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‡ High Rad Resistance

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MEMORY

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line		
Dynamic—General Purpose										(Cont'd)				
64Kx4	150	NMOS					5	18		MT4067-15	◊ MicronTech (3579)	5		
		NMOS, Page Mode					5	18		KM41464A-15	◊ Samsung			
		NMOS, Refurbished					5	18		4464-150	◊ Krueger			
	200	CMOS					5	18		SMJ4464-20	*† TI			
64Kx8	70	CMOS					5	24		V53C864-70	Vitellic (3746)	5		
										V53C864-70L	Vitellic (3746)			
										V53C866-70	Vitellic (3746)			
	80	CMOS					5	24		V53C864-80	Vitellic (3746)	10		
										V53C864-80L	Vitellic (3746)			
										V53C866-80	Vitellic (3746)			
	100	CMOS					5	24		V53C864-10	Vitellic (3746)	15		
										V53C864-10L	Vitellic (3746)			
										V53C866-100	Vitellic (3746)			
	120	CMOS					5	24		V53C864-12	Vitellic (3746)	15		
										V53C864-12L	Vitellic (3746)			
										V53C866-120	Vitellic (3746)			
64Kx16	70	CMOS					5	40		MT4C1668-7	MicronTech	20		
										MT4C1669-7	MicronTech			
										MT4C1672-7	◊ MicronTech			
		TTL	Fast Page	0.3	105	5	40			MT4C1664L-7	MicronTech			
					110	5	40	Dual WE		MT4C1664-7	MicronTech (3580)			
								Dual WE, Write Per Bit		MT4C1665-7	MicronTech (3580)			
		Static Column		0.3	105	5	40			MT4C1670L-7	MicronTech			
					110	5	40	Dual WE, Static Column		MT4C1670-7	MicronTech (3580)			
										MT4C1671-7	MicronTech (3580)			
							100	5	40	Dual WE, Static Column	MT4C1671-8	MicronTech (3580)		
	80	CMOS					5	40		MT4C1668-8	MicronTech	30		
										MT4C1669-8	MicronTech			
										MT4C1672-8	◊ MicronTech			
										TC511664-80	◊ Toshiba			
										TC511664B-80	◊ Toshiba			
										TC511665-80	◊ Toshiba			
										TC511665B-80	◊ Toshiba			
										TC51665-80	◊ Toshiba			
		TTL	Fast Page	1	100	5	40	Dual WE		MT4C1664-8	MicronTech (3580)			
								Dual WE, Write Per Bit		MT4C1665-8	MicronTech (3580)			
		Static Column		1	100	5	40	Dual WE, Write Per Bit		MT4C1670-8	MicronTech (3580)			
	100	CMOS					5	40		MT4C1668-10	MicronTech	40		
										MT4C1669-10	MicronTech			
										MT4C1672-10	◊ MicronTech			
										TC511664-10	◊ Toshiba			
										TC511664B-10	◊ Toshiba			
										TC511665-10	◊ Toshiba			
										TC511665B-10	◊ Toshiba			
		TTL					24	Dual WE, Static Column		MT4C1671-10	MicronTech (3580)			
		Fast Page	1		90	5	40	Dual WE		MT4C1664-10	MicronTech (3580)			
								Dual WE, Write Per Bit		MT4C1665-10	MicronTech (3580)			
		Static Column		1	90	5	40	Dual WE, Static Column		MT4C1670-10	MicronTech (3580)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMS (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
128Kx8	70	CMOS					5	26		TMS48C128-70	◊ TI	5
										TMS48C138-70	◊ TI	
	80	CMOS					5	26		TMS48C128-80	◊ TI	
										TMS48C138-80	◊ TI	
	100	CMOS	Pseudo-Static				5	32		TC518128A-80	◊ Toshiba	
										TC518129A-80	◊ Toshiba	
128Kx9	70	CMOS					5	22		LH69128-70	Sharp	10
										LH69128-90	Sharp	
	90	CMOS					5	22		LH66180	Sharp	
	120	CMOS	Pseudo-Static				5	32		TC518128A-10	◊ Toshiba	
										TC518129A-10	◊ Toshiba	
180Kx6	70	CMOS					5	16		HY53C256-70	Hyundai (3531)	20
										HY53C256L-70	Hyundai	
	90	CMOS					5	22		KM41C256-07	◊ Samsung	
										KM41C257-07	◊ Samsung	
	120	CMOS	Pseudo-Static				5	32		TC514258A-70	◊ Toshiba	
256Kx1	70	CMOS					5	16		V53C256-70	Vitellic (3743, 3746)	25
										V53C256-70L	Vitellic (3743, 3746)	
	90	CMOS					5	16		V53C258-70	◊ Vitelic (3743, 3746)	
										V53C258-70L	Vitellic (3743, 3746)	
	120	CMOS	Pseudo-Static				5	16		GM71C256-80	GoldStar	
										HY53C256-80	Hyundai (3531)	
128Kx9	70	CMOS					5	22		HY53C256L-80	Hyundai	30
										KM41C256-08	◊ Samsung	
	90	CMOS					5	22		KM41C257-08	◊ Samsung	
										KM41C258-08	◊ Samsung	
	120	CMOS	Pseudo-Static				5	32		V53C256-80	Vitellic (3743, 3746)	
										V53C256-80L	Vitellic (3746)	
180Kx6	70	CMOS					5	16		V53C258-80	Vitellic (3743, 3746)	35
										V53C258-80L	Vitellic (3743, 3746)	
	90	CMOS					5	16		MT1259-8	◊ MicronTech (3579)	
										MN41256A-08	◊ Panasonic	
	120	CMOS	Pseudo-Static				5	32		MN41256AL-08	Panasonic	
										MN41257A-08	Panasonic	
256Kx1	70	CMOS					5	16		41257AL-08	Panasonic	40
	90	CMOS					5	22		GM71C256-10	GoldStar	
										HY53C256-10	Hyundai (3531)	
	120	CMOS	Pseudo-Static				5	32		HY53C256L-10	Hyundai	
										KM41C256-10	◊ Samsung	
128Kx9	70	CMOS					5	22		KM41C257-10	◊ Samsung	45
										KM41C258-10	◊ Samsung	
	90	CMOS					5	22		V53C256-10	Vitellic (3743, 3746)	
										V53C256-10L	Vitellic (3743, 3746)	
	120	CMOS	Pseudo-Static				5	32		V53C258-10	Vitellic (3743, 3746)	
										V53C258-10L	Vitellic (3743, 3746)	
180Kx6	70	CMOS					5	16				50
	90	CMOS					5	22				
	120	CMOS	Pseudo-Static				5	32				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Tech-nology	I/O Comp- atibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
256Kx1	100	Fast Page NMOS					5 5	16 16		MB81256-10 ♦ Fujitsu MT1259-10 ♦ MicronTech MT1259-12 ♦ MicronTech (3579) μPD41256-10 ♦ NEC (3591) MSM41256A-10 ♦ OKI (3598) MKB45F56-80 † SGS-Thomson LH21256-10 Sharp LH21257-10 Sharp LH21258-10 Sharp HYB41256-10 Siemens	(Cont'd)	5
	100 NSF 120	NMOS CMOS					5 5	16 16		MSM41257A-10 OKI GM71C256-12 GoldStar HM51258-12 Hitachi HY53C256-12 Hyundai (3531) HY53C256L-12 Hyundai LH21256-12 Sharp LH21257-12 Sharp LH21258-12 Sharp V53C256-12 Vitelec (3743, 3746) V53C256L-12 Vitelec (3743, 3746)		10
		Fast Page NMOS					5 5	16 16		MB81256-12 ♦ Fujitsu HM50256-12 * Hitachi μPD41256-12 ♦ NEC (3591) μPD41257-12 ♦ NEC MSM41256A-12 ♦ OKI (3598) MSM41257A-12 OKI MKB45F56-81 † SGS-Thomson MK45H56-12 SGS-Thomson		25
		NMOS, Page Mode TTL					5 5	16 16		KM41256A-12 ♦ Samsung HYB41256-12 Siemens		30
	150	CMOS					5	16		HM51258-15 Hitachi LH21256-15 Sharp LH21257-15 Sharp LH21258-15 Sharp		35
		NMOS					5	16		HM50256-15 * Hitachi MT1259-15 ♦ MicronTech (3579) μPD41257-15 ♦ NEC MSM41256A-15 ♦ OKI (3598) MSM41257A-15 OKI MKB45F56-82 † SGS-Thomson MK45H56-15 SGS-Thomson SMJ4256-15 *† TI		40
		NMOS, Page Mode TTL					5 5	16 16		KM41256A-15 ♦ Samsung HYB41256-15 Siemens		45
	200	CMOS					5	16		LH21256-20 Sharp LH21257-20 Sharp LH21258-20 Sharp		55
		NMOS					5	16		HM50256-20 * Hitachi SMJ4256-20 *† TI		55
256Kx2	80	NMOS					5	26		412256-80 Micro-C (3578)		50
	100	NMOS					5	26		412256-100 Micro-C (3578)		
256Kx3	80	NMOS					5	26		413256-80 Micro-C (3578)		
256Kx4	25	Pseudo-Static, CMOS					5	16		TMS4C1050-3 * TI		55
	50	Pseudo-Static, CMOS					5	16		TMS4C1050-6 * TI		
	60	CMOS					5	18		MB81C4256A(L)-60 Fujitsu		
								20		MN41C4256A-06 Panasonic MN41C4256AL-06 Panasonic MN41C4258A-06 Panasonic MN41C4258AL-06 Panasonic (Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
256Kx4	60	CMOS					5	20		(Cont'd)		
										HYB514256A-60	Siemens	5
										TMS44C256-60	TI	
										26		
										TC514256B-60	Toshiba	
										TC514258B-60	Toshiba	
										TC514266B-60	Toshiba	
										TTL Fast Page 1	90	10
										5	20	
										MT4C4256-6	MicronTech	
										TTL/CMOS Fast Page 2	90	
										5	20	
70	CMOS						5	20		HY534256-60	Hyundai (3531)	15
										MB81C4256A-60	Fujitsu	
										MB81C4258A-60	Fujitsu	
										TMS44C260-60	TI	
										20		20
										ED144256C70B	EDI (3466)	
										MB81C4256A(L)-70	Fujitsu	
										MT4C4260-7	MicronTech	
										M5M44266-7	Mitsubishi	
								18		MCM51L4256A-70	Motorola	25
										MCM514256A-70	Motorola	
										MCM514258A-70	Motorola	
										20		
										μPD424256-70	NEC (3591)	30
										μPD424258-70	NEC	
										MN41C4256A-07	Panasonic	
										MN41C4256AL-07	Panasonic	
										MN41C4258A-07	Panasonic	
								20		MN41C4258AL-07	Panasonic	35
										HYB514256A-70	Siemens	
										TMS44C256-70	TI	
										TC514256A-70	Toshiba	
										26		40
										TC514256B-70	Toshiba	
										TC514258B-70	Toshiba	
										TC514266B-70	Toshiba	
								20		TC514268A-70	Toshiba	35
										CMOS/TTL Fast Page 2	80	
										1	80	
										Fast Page 0.2	75	
										1	80	
										Static Column 1	80	40
										CMOS, Fast Page	5	
										Fast Page	5	
										Static Column	5	
								5	20	TTL	5	40
										MB81C4256A(L)-80	Fujitsu	
										GM71C4256A-80	GoldStar	
										HY51C4256-80	Hyundai	
										HY51C4256L-80	Hyundai	
										80		
										CMOS		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
256Kx4	80	CMOS					5	20		MT4C4256 883C-8 † MicronTech MT4C4260-8 † MicronTech M5M44256B-7 † Mitsubishi M5M44256B-8 † Mitsubishi M5M44258A-8 † Mitsubishi M5M44258B-7 † Mitsubishi M5M44258B-8 † Mitsubishi M5M44266-8 Mitsubishi M5M44268-8 Mitsubishi		5
								18		MCM51L4256A-80 Motorola MCM514256A-80 Motorola MCM514258A-80 Motorola		10
								20		μPD424256-80 NEC (3591) μPD424258-80 NEC MN41C4256-08 † Panasonic MN41C4256A-08 Panasonic MN41C4256AL-08 Panasonic MN41C4258-08 † Panasonic MN41C4258A-08 Panasonic MN41C4258AL-08 Panasonic MN41C4258L-08 Panasonic HYB514256A-80 † Siemens		15
								18		TMS44C256-80 † TI		20
								20		TC514256A-80 † Toshiba		25
								26		TC514256B-80 † Toshiba		25
								18		TC514258A-80 † Toshiba		25
								26		TC514258B-80 † Toshiba TC514266B-80 † Toshiba		25
		CMOS/TTL										
		Fast Page	2		70	5	20			HY534256-80 † Hyundai (3531)		30
		TTL	1		70	5	24			MT4C4259-8 MicronTech (3580)		30
		Fast Page	0.2		65	5	20		Low Power	MT4C4256L-8 MicronTech		30
			1		70	5	20			MT4C4256-8 MicronTech (3579)		30
		Static Column	1		70	5	20		Static Column	MT4C4258-8 MicronTech (3579)		30
		CMOS, Page Mode					5	20		KM44C256A-08 † Samsung		35
		CMOS, Static Column					5	20		KM44C258A-08 † Samsung TC514268A-80 † Toshiba		35
		Fast Page					5	20		MB81C4256-80 † Fujitsu MB81C4256A-80 Fujitsu MB81C4256L-80 † Fujitsu		40
		Nibble Mode					5	20		MB81C4258A-80 Fujitsu		40
		NMOS					5	26		414256-80 Micro-C (3578)		40
		Static Column					5	20		MB81C4258-80 † Fujitsu MB81C4258L-80 † Fujitsu		40
		TTL					5			TMS44C260-80 † TI		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
256Kx4	85	CMOS					5	20		GM71C4256-85 GoldStar MCM514256A-85 Motorola MCM514258A-85 Motorola V53C104-85 Vitelic V53C104-85L Vitelic		5
	100	CMOS					5	20		MB81C4256A(L)-10 Fujitsu MB81C4256A-10 Fujitsu (3467) GM71C4256-10 GoldStar GM71C4256A-10 GoldStar HY51C4256-10 Hyundai HY51C4256L-10 Hyundai 514256-10 Krueger MT4C4256-10 MicronTech (3579) MT4C4256 883C-10 MicronTech		10
								26		MT4C4259-10 MicronTech (3579)		15
								20		MT4C4260-10 MicronTech M5M44256B-10 Mitsubishi M5M44258A-10 Mitsubishi M5M44258B-10 Mitsubishi M5M44266-10 Mitsubishi M5M44268-10 Mitsubishi		20
								18		MCM5114256A-10 Motorola MCM514256A-10 Motorola MCM514258A-10 Motorola		25
								20		μPD424256-10 NEC (3591) μPD424258-10 NEC		25
								28		MSM514251-10 OKI		30
								20		MSM514256-10 OKI (3598, 3608) MSM514258-10 OKI (3598, 3608)		30
								22		LH64256-10 Sharp LH64258-10 Sharp HYB514256A-10 Siemens SMJ44C256-10 Ti TMS44C256-10 Ti		35
								26		TC514256B-10 Toshiba TC514258B-10 Toshiba TC514266B-10 Toshiba		40
								20		V53C104-10 Vitelic V53C104-10L Vitelic		40
									TTL	1 60 5 24 Quad CAS Parity Fast Page 0.2 55 5 20 Low Power Static Column 1 60 5 20 Static Column		45
									CMOS, Fast Page	5 20		
									CMOS, Page Mode	5 20		
									CMOS, Static Column	5 20		
										TC514266A-10 Toshiba KM44C256A-10 Samsung KM44C258A-10 Samsung		45

MEMORY

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance * Typical Value * Behavioral Model Available ♦ Available in Surface Mount Package

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
256Kx4	100	CMOS, Static Column				5	20			TC514258A-10 ◊ Toshiba TC514268A-10 ◊ Toshiba	(Cont'd)	
		Fast Page				5	20			MB81C4256L-10 ◊ Fujitsu		
		NMOS				5	26			414256-100 Micro-C (3578)		
		NMOS, Refurbished				5	18			41256-100 ◊ Krueger (3548)		5
		Static Column				5	20			MB81C4258L-10 ◊ Fujitsu		
		TTL				5				TMS44C260-10 ◊ TI		
	120	CMOS				5	20			GM71C4256-12 GoldStar GM71C4256A-12 GoldStar HY51C4256-12 Hyundai HY51C4256L-12 Hyundai 514256-12 ◊ Krueger MT4C4256-12 ◊ MicronTech (3579)		10
										MT4C4256 883C-12 ◊† MicronTech		
							26			MT4C4259-12 MicronTech (3580)		15
							20			MCM514256A-12 ◊ Motorola MCM514258A-12 ◊* Motorola		
										μPD424256-12 NEC (3591) μPD424258-12 NEC		
							28			MSM514251-12 OKI		20
							20			MSM514256-12 ◊ OKI (3598, 3608) MSM514258-12 ◊ OKI (3598, 3608)		
							22			LH64256-12 Sharp LH64258-12 Sharp SMJ44C256-12 *† TI		25
										TMS44C256-12 ◊ TI		
										V53C104-12 Vitelic V53C104-12L Vitelic		
		CMOS, Static Column				5	20			MT4C4258-12 MicronTech (3579)		
		NMOS, Refurbished				5	18			41256-120 ◊ Krueger (3548)		30
150	CMOS					5	20			ED144256C150B EDI (3466) HY51C4256-15 Hyundai HY51C4256L-15 Hyundai MT4C4256-15 ◊* MicronTech (3579)		
										LH64258-15 Sharp SMJ44C256-15 *† TI		35
		CMOS, Static Column				5	20			MT4C4258-15 MicronTech (3579)		
		NMOS, Refurbished				5	18			41256-150 ◊ Krueger (3548)		
256Kx8	70	CMOS				5	30			MCM8L4256-70 Motorola		40
		CMOS TS				5	30			MCM84256-70 Motorola		
	80	CMOS				5	28			512256-08 Micro-C (3578)		
							30			MCM8L4256-80 Motorola MCM84256-80 Motorola		
	85	CMOS				5	28			512256-085 Micro-C (3578)		
	88	CMOS				5	28			512256-088 Micro-C (3578)		45
100	CMOS					5	30			MCM8L4256-10 Motorola MCM84256-10 Motorola		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose											(Cont'd)	
256Kx8	100	NMOS					5	30		MSC2304-10	OKI	(Cont'd)
	120									MSC2304-12	OKI	
256Kx9	60	CMOS					5	30		MM2800J9S-06	NMB	5
	70	CMOS								MCM9L4256-70	Motorola	
										MCM94256-70	Motorola	
										MM2800J9S-07	NMB	
	80	CMOS								MCM9L4256-80	Motorola	
256Kx16	70	CMOS	TTL	Fast Page	0.3	115	5	40	Dual CAS, Write Per Bit	MT4C16256L-7	MicronTech (3580)	15
										MT4C16257L-7	MicronTech (3580)	
										μPD424170-70	◊ NEC	
										μPD424260-70	◊ NEC	
	80	CMOS								MT4C16256-7	MicronTech (3580)	
256Kx18	70	CMOS	TTL	Fast Page	0.3	145	5	40	Dual WE Dual CAS Dual WE, Write Per Bit Dual CAS, Write Per Bit	MT4C16257-7	MicronTech (3580)	20
										MT4C16258-7	MicronTech	
										MT4C16259-7	MicronTech	
										MT4C16256-8	◊ MicronTech (3580)	
										MT4C16257-8	◊ MicronTech (3580)	
	80	CMOS	TTL	Fast Page	0.3	105	5	40		MT4C16258-8	◊ MicronTech	
										MT4C16259-8	◊ MicronTech	
										μPD424170-80	◊ NEC	
										μPD424260-80	◊ NEC	
										μPD424280-80	◊ NEC	
256Kx36	70	CMOS					5	72		MT4C16256-10	◊ MicronTech (3580)	35
	80	CMOS								MT4C16257-10	◊ MicronTech (3580)	
	100	CMOS								MT4C16258-10	◊ MicronTech	
										MT4C16259-10	◊ MicronTech	
										MT4C16256-10	Motorola	
512Kx4	85	CMOS					5	28		MCM36256-70	Motorola	40
	100	CMOS								MCM36256-80	Motorola	
512Kx8	70	CMOS	TTL	Fast Page	0.3	120	5	28		MCM36256-10	Motorola	45
										512512-085	Micro-C (3578)	
										512400-10	Micro-C (3578)	
										TC514800A-70	Toshiba	
	80	CMOS								μPD424800-70	◊ NEC (3591)	
512Kx16	70	CMOS	TTL	Fast Page	0.3	110	5	28		MT4C8512-7	MicronTech	40
										MT4C8513-7	MicronTech	
										MT4C8512-8	◊ MicronTech	
										MT4C8513-8	◊ MicronTech	
	80	CMOS								TC514800A-80	Toshiba	
512Kx32	70	CMOS	TTL	Fast Page	0.3	110	5	28		μPD424800-80	◊ NEC (3591)	45
										μPD424800-80	◊ NEC (3591)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
512Kx8	100	CMOS					5	28		MT4C8512-10 ♦ MicronTech MT4C8513-10 ♦ MicronTech TC514800A-10 ♦ Toshiba	(3591)	
			TTL	Fast Page	0.3	120	5	28		μPD424800-10 ♦ NEC	(3591)	
512Kx9	70	CMOS					5	28		TC514900A-70 ♦ Toshiba	(3719)	5
			TTL	Fast Page	0.3	100	5	28		μPD424900-70 ♦ NEC	(3591)	
	80	CMOS					5	28		TC514900A-80 ♦ Toshiba	(3719)	
			TTL	Fast Page	0.3	100	5	28		μPD424900-80 ♦ NEC	(3591)	
	100	CMOS					5	28		TC514900A-10 ♦ Toshiba	(3719)	
512Kx36	70	CMOS					5	72		MCM36512-70 Motorola		10
	80	CMOS					5	72		MCM36512-80 Motorola		
	100	CMOS					5	72		MCM36512-10 Motorola		
1Mx3	80	CMOS					5	20		513300-08 Micro-C	(3578)	
	100	CMOS					5	20		513300-10 Micro-C	(3578)	
1Mx1	53	CMOS	TS	Enh. Page Mode 1		80	5	18		AAA1M300-53 ♦ NMB AAA1M304-53 ♦ NMB	(3597) (3597)	15
	60	CMOS					5	18		MB81C1000A(L)-60 Fujitsu MB81C1000A-60 ♦ Fujitsu (3468) MB81C1000A-60L ♦ Fujitsu MB81C1001A(L)-60 Fujitsu MN41C1000A-06 Panasonic		20
								20		MN41C1000L-06 Panasonic		
								18		MN41C1002A-06 Panasonic		
								20		MN41C1002AL-06 Panasonic		
								18		HYB511000A-60 ♦ Siemens		25
										TMS4C1024-60 ♦ TI		
								26		TC511000B-60 ♦ Toshiba TC511001B-60 ♦ Toshiba TC511002B-60 ♦ Toshiba		
			TTL	Fast Page	1	90	5	20		MT4C1024-60 MicronTech		30
			Nibble Mode				5	20		MB81C1001A-60 ♦ Fujitsu		
	70	CMOS					5	20		EDI411024C70B EDI (3466) MB81C000A(L)-70 Fujitsu MB81C1000-70 ♦ Fujitsu MB81C1000-70L ♦ Fujitsu MB81C1000A-70 ♦ Fujitsu (3468) MB81C1000A-70L ♦ Fujitsu MB81C1001A(L)-70 Fujitsu MT4C1026-7 ♦ MicronTech (3579) MT4C1027-7 ♦ MicronTech MCM5111000A-70 ♦ Motorola MCM511000A-70 ♦ Motorola MCM511001A-70 ♦ Motorola MCM511002A-70 Motorola		35
								18			(Continued)	40

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
1Mx1	70	CMOS					5	18		μPD421000-70 ♦ NEC (3591) μPD421001-70 ♦ NEC μPD421002-70 ♦ NEC MN41C1000A-07 Panasonic		
								20		MN41C1000L-07 Panasonic		5
								18		MN41C1002A-07 Panasonic		
								20		MN41C1002AL-07 Panasonic		
								18		HYB511000A-70 ♦ Siemens		
										TMS4C1024-70 ♦ TI		
										TC511000A-70 ♦ Toshiba		10
								26		TC511000B-70 ♦ Toshiba		
								18		TC511001A-70 ♦ Toshiba		
								26		TC511001B-70 ♦ Toshiba		
								18		TC511002A-70 ♦ Toshiba		
								26		TC511002B-70 ♦ Toshiba		15
										MT4C1024L-7 MicronTech		
										MT4C1024-70 MicronTech		
										KM41C1001A-07 ♦ Samsung		
										KM41C1000A-07 ♦ Samsung		
										KM41C1002A-07 ♦ Samsung		20
										MB81C1001A-70 Fujitsu		
80		CMOS					5	18		MB81C1000-80 ♦ Fujitsu		
										MB81C1000-80L ♦ Fujitsu		
										MB81C1000A(L)-80 Fujitsu		
										MB81C1000A-80 ♦ Fujitsu (3468)		25
										MB81C1000A-80L ♦ Fujitsu		
										MB81C1001A(L)-80 Fujitsu		
										HY51C1000-80 Hyundai		
										HY51C1000L-80 Hyundai		
										HY51C1002-80 Hyundai		30
										HY51C1002L-80 Hyundai		
										MT4C1024-8 ♦ MicronTech (3579)		
										MT4C1026-8 ♦ MicronTech (3579)		
										MT4C1027-8 ♦ MicronTech		
										M5M41000B-7 ♦ Mitsubishi		35
										M5M41000B-8 ♦ Mitsubishi		
										M5M41001B-7 ♦ Mitsubishi		
										M5M41001B-8 ♦ Mitsubishi		
										M5M41002B-7 ♦ Mitsubishi		40
										M5M41002B-8 ♦ Mitsubishi		
										MDM11001-80 Mosaic Semi		
										MCM51L1000A-80 Motorola		
										MCM511000A-80 ♦ Motorola		
										MCM511001A-80 ♦ Motorola		
										MCM511002A-80 Motorola		45
										μPD421000-80 NEC (3591)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Dynamic—General Purpose										(Cont'd)			
1Mx1	80	CMOS					5	18		(Cont'd)			
										μPD421001-80 μPD421002-80 MN41C1000-08 ◊ Panasonic	NEC NEC		
								20		MN41C1000A-08 ◊ Panasonic		5	
								18		MN41C1000L-08 Panasonic			
								18		MN41C1002-08 ◊ Panasonic			
								20		MN41C1002A-08 Panasonic			
								20		MN41C1002AL-08 Panasonic			
								18		MN41C1002L-08 Panasonic			
								18		HYB511000A-80 ◊ Siemens		10	
										TMS4C1024-80 ◊* TI			
										TMS4C1025-80 ◊* TI			
										TMS4C1027-80 ◊* TI			
								26		TC51000B-80 ◊ Toshiba		15	
								18		TC511000A-80 ◊* Toshiba			
								26		TC511000B-80 ◊* Toshiba			
										TC511000B-80 ◊* Toshiba			
								18		TC511001A-80 ◊* Toshiba			
								26		TC511001B-80 ◊* Toshiba			
								18		TC511002A-80 ◊* Toshiba		20	
								26		TC511002B-80 ◊* Toshiba			
				TTL	Fast Page	0.2	65	5	20	Low Power	MT4C1024L-8	MicronTech	
					1		70	5	20		MT4C1024-80	MicronTech	
											MT4C1024883C-8	MicronTech	
				TTL/CMOS									
					Fast Page	2	85	5	28		HY531000-80	◊ Hyundai (3531)	25
				CMOS, Nibble Mode				5	18		KM41C1001A-08 ◊ Samsung		
				CMOS, Page Mode				5	18		KM41C1000A-08 ◊ Samsung		
				CMOS, Static Column				5	18		KM41C1002A-08 ◊ Samsung		
				Fast Page				5	20		MB81C1000L-80 ◊ Fujitsu		
				Nibble Mode				5	20		MB81C1001-80 ◊ Fujitsu		30
											MB81C1001A-80 Fujitsu		
											MB81C1001L-80 Fujitsu		
85		CMOS					5	18			GM71C1000-80 MCM511000A-85 MCM511001A-85 MCM511002A-85 ◊ Motorola	GoldStar Motorola Motorola Motorola	35
100		CMOS					5	18			MB81C001A(L)-10 Fujitsu		40
											MB81C1000-10 Fujitsu		
											MB81C1000-10L Fujitsu		
											MB81C1000A(L)-10 Fujitsu		
											MB81C1000A-10 Fujitsu (3468)		
											(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
1Mx1	120	CMOS					5	18			(Cont'd)	
										MCM511000A-12 ◊ Motorola		
										MCM511001A-12 ◊ Motorola		
										MCM511002A-12 ◊ Motorola		
										μPD421000-12 NEC (3591)		5
										μPD421001-12 NEC		
										μPD421002-12 NEC		
										MSM511000-12 ◊ OKI (3598, 3608)		
										MSM511001-12 ◊ OKI (3598)		
										MSM511002-12 OKI (3598)		
										SMJ4C1024-12		
										*† TI		10
										TMS4C1024-12		
										* TI		
										TMS4C1025-12		
										* TI		
										TMS4C1027-12		
										* TI		
				TTL	Fast Page 1		5			MT4C1024883C-12	MicronTech	
150	CMOS						5	20		ED1411024C150B EDI (3466)		15
								18		HY51C1000-15 Hyundai		
										HY51C1002-15 Hyundai		
										HY51C1002L-15 Hyundai		
										MT4C1024-15 ◊* MicronTech (3579)		
										SMJ4C1024-15		
										*† TI		20
1Mx4	50	CMOS	TS	Enh. Page Mode			20			AAA4M204-05 NMB (3596)		
	60	CMOS		100	5		5	26		MB814400A-60 Fujitsu (3470)		
								20		MT4C4005-6 ◊ MicronTech		
								26		TC514400A-60 ◊ Toshiba		
										TC514402A-60		
										◊* Toshiba		25
										TC514410A-60 ◊ Toshiba		
			TS	Enh. Page Mode						AAA4M204-06 NMB (3596)		
				1	90	5	20			MT4C4001JL-6 MicronTech		
			TTL	Fast Page 0.3	105	5	20			μPD424400-60		
					120	5	20			◊ NEC		
										MT4C4001J-6 MicronTech		30
										MT4C4003J-6 MicronTech		
				Static Column								
				TTL/CMOS								
				Fast Page 2	80	5	20			HY514400-10 ◊ Hyundai (3531)		
					100	5	20			HY514400-60 ◊ Hyundai (3531)		
70	CMOS						5	26		MB814400A-70 Fujitsu (3470)		
										MT4C4004-7 ◊ MicronTech		35
								20		MT4C4005-7 ◊ MicronTech		
										MN414400AL-07 Panasonic		
								26		MN414400ASJ-07		
								32		◊ Panasonic		
										MN414400AT-07		
										◊ Panasonic		40
								26		MN414400AWJ-07		
								20		◊ Panasonic		
								26		MN424400AL-07 Panasonic		
										MN424400ASJ-07		
										◊ Panasonic		
								32		MN424400AT-07		
										◊ Panasonic		
										MN424400ATT-07		
										◊ Panasonic		45
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
1Mx4	70	CMOS					5	26		MN424400AWJ-07 ◊ Panasonic TC514400A-70 ◊ Toshiba TC514402A-70 ◊* Toshiba TC514410A-70 ◊ Toshiba	(Cont'd)	
		TS		Enh. Page Mode	80	5	20			AAA4M204-007	NMB	5
		TTL		Fast Page	0.3	95	5	20	Low Power	MT4C4001JL-7 μPD424400-70 ◊ NEC	MicronTech	
					1	100	5	20	Write Per Bit	MT4C1005JL-7 MT4C4001J-7	MicronTech MicronTech	
		TTL/CMOS		Fast Page	2	95	5	20		HY514400-70	◊ Hyundai (3531)	10
		CMOS Page Mode					5	20		MT4C4001-7	MicronTech (3579)	
		CMOS Static Column					5	20		MT4C4003-7	MicronTech (3579)	
80	CMOS						5	26		MB814400(L)-80 Fujitsu MB814400A-80 Fujitsu (3470) HM514400-8 ◊ Hitachi 514400-08 Micro-C (3578) MT4C4001 883C-8 † MicronTech		15
								26		MT4C4004-8 ◊ MicronTech		
								20		MT4C4005-8 MicronTech		
								26		MCM41000-80 Motorola		20
								18		MCM51L4400-80 ◊ Motorola MCM514400-80 ◊ Motorola MCM514410-80 ◊ Motorola		
								26		μPD424400-80 ◊ NEC (3591)		
								20		MN41C41000-08 Panasonic MN41C41000L-08 Panasonic MN41C41002-08 Panasonic MN41C41002L-08 Panasonic MN414400AL-08 Panasonic		25
								26		MN414400ASJ-08 ◊ Panasonic		
								32		MN414400AT-08 ◊ Panasonic MN414400ATT-08 ◊ Panasonic		30
								26		MN414400AWJ-08 ◊ Panasonic		
								20		MN424400AL-08 Panasonic		
								26		MN424400ASJ-08 ◊ Panasonic		35
								32		MN424400AT-08 ◊ Panasonic MN424400ATT-08 ◊ Panasonic		
								26		MN424400AWJ-08 ◊ Panasonic		
								20		KM44C1000-08 ◊ Samsung KM44C1002-08 ◊ Samsung HYB514400-80 ◊ Siemens		40
								26		TMS44400-80 * TI TC514400A-80 ◊ Toshiba TC514402A-80 ◊* Toshiba TC514410A-80 ◊ Toshiba		45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Dynamic—General Purpose										(Cont'd)			
1Mx4	80	CMOS	TS	Enh. Page Mode							(Cont'd)		
					1	70	5	20		AAA4M204-08	NMB (3596)		
					1	70	5	20		MT4C4004J-80	MicronTech		
					Fast Page	0.3	85	5	20	Low Power	MT4C4001JL-8	MicronTech	
					1	90	5	20		MT4C4001J-8	MicronTech		
			TTL/CMOS	Fast Page	2	90	5	20		HY514400-80	Hyundai (3531)	5	
										TC514400-80	Toshiba		
			CMOS, Fast Page				5	20		TC514410-80	Toshiba		
			CMOS, Nibble Mode				5	20		TC514402-80	Toshiba		
			CMOS Page Mode				5	20		MT4C4001-8	MicronTech		
			CMOS Static Column				5	20		MT4C4003-8	MicronTech (3579)	10	
			Fast Page				5	20		MB814400-8	Fujitsu		
			NMOS				5	20		M5M44400-8	Mitsubishi		
										M5M44402-8	Mitsubishi		
	88	CMOS					5	20		514400-88	Micro-C (3578)	15	
	100	CMOS							26		MB814400(L)-10	Fujitsu	
											HM514400-10	Hitachi	
									20		MT4C4001		
									26		883C-10	† MicronTech	
									26		MT4C4004-10	† MicronTech	
									20		MDM41000-10	Mosaic Semi	
									26		MCM41000-10	Motorola	
									18		MCM5114400-10	Motorola	
											MCM514400-10	Motorola	
											MCM514410-10	Motorola	
										MCM514410-10	Motorola		
26										μPD424400-10	NEC (3591)		
20										MN41C41000-10	Panasonic	25	
										MN41C41000L-10	Panasonic		
										MN41C41002-10	Panasonic		
										MN41C41002L-10	Panasonic		
										KM44C1000-10	Samsung		
										KM44C1002-10	Samsung		
										HYB514400-10	Siemens	30	
										TMS44400-10	* TI		
										TC514400A-10	† Toshiba		
										TC514402A-10	† Toshiba		
										TC514410A-10	† Toshiba	35	
										TC514410-10	† Toshiba		
										TC514402-10	† Toshiba		
		MT4C4001-10	MicronTech (3579)										
		MT4C4003-10	MicronTech (3579)	40									
		M5M44400-10	Mitsubishi										
		M5M44402-10	Mitsubishi										
120	CMOS							26		HM514400-12	Hitachi		
								20		MT4C4001			
										883C-12	† MicronTech		
										MDM41000-12	Mosaic Semi		
								26		μPD424400-12	NEC (3591)	45	
1Mx8	70	CMOS						30		MCM8L1000-70	Motorola		
										MCM81000-70	Motorola		
										MCM81001-70	Motorola		
										MCM81002-70	Motorola		
											(Continued)	50	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Dynamic—General Purpose										(Cont'd)																																																																																																																																																																																																																																																																																																																																																																																																																																																										
1Mx8	70	CMOS					5	30		MC421000A8-70 NEC MC421000B8-70 NEC (3591) MC421000C8-70 NEC	(Cont'd)																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			80	CMOS				5	30		MCM8L1000-80 Motorola MCM81000-80 Motorola MCM81001-80 Motorola MCM81002-80 Motorola MC421000A8-80 NEC MC421000B8-80 NEC (3591) MC421000C8-80 NEC	5																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					100	CMOS				5	30		MCM8L1000-10 Motorola MCM81000-10 Motorola MCM81001-10 Motorola MCM81002-10 Motorola MC421000A8-10 NEC MC421000B8-10 NEC (3591) MC421000C8-10 NEC	10																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	TTL Fast Page 8						520	5	30		MSC2313-10 OKI (3598, 3608)	15																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	120	CMOS					TTL Fast Page 8	520	5	30		MSC2313-12 OKI (3598)																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	1Mx9	60					CMOS	TTL/CMOS	Fast Page 18	765	5	30	5	30	HYM591000-60 Hyundai MCM9L1000-70 Motorola MCM91000-70 Motorola MCM91001-70 Motorola MCM91002-70 Motorola MC421000A9-70 NEC (3591) MC421000B9-70 NEC MC421000C9-70 NEC	20																																																																																																																																																																																																																																																																																																																																																																																																																																																				
																	70	CMOS	5	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

• Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
4Mx1	70	CMOS					5	26		(Cont'd)		
										MB814100A(L)-70	Fujitsu	5
										MB814100A-70	Fujitsu (3469)	
										MB814101A(L)-70	Fujitsu	
										MB814101A-70	Fujitsu	
										HM514100-7	Hitachi	
										MN414100AL-07	Panasonic	10
										MN414100ASJ-07	♦ Panasonic	
										MN414100AT-07	♦ Panasonic	
										MN414100ATT-07	♦ Panasonic	
										MN414100AWJ-07	♦ Panasonic	
										MN424100AL-07	♦ Panasonic	15
										MN424100ASJ-07	♦ Panasonic	
										MN424100AT-07	♦ Panasonic	
										MN424100ATT-07	♦ Panasonic	
										MN424100AWJ-07	♦ Panasonic	
										TC514100A-70	♦ Toshiba	
										TC514101A-70	♦ Toshiba	
										TC514102A-70	♦ Toshiba	
										AAA4M200-07	NMB	20
										MT4C1004JL-7	MicronTech	
										μPD424100-70	♦ NEC	
										HY514100-70	♦ Hyundai (3531)	
										MT4C1004-7	MicronTech (3579)	
										MT4C1006-7	MicronTech (3579)	
										EDI41496C80B	EDI	25
										MB814100(L)-80	Fujitsu	
										MB814100-80	♦ Fujitsu	
										MB814100A(L)-80	Fujitsu	30
										MB814100A-80	Fujitsu (3469)	
										MB814101(L)-80	Fujitsu	
										MB814101-80	♦ Fujitsu	35
										MB814101A(L)-80	Fujitsu	
										MB814101A-80	Fujitsu	
										HM514100-8	Hitachi	40
										MT4C1004		
										883C-8	† MicronTech	
										MCM11400-80	Motorola	45
										MCM5114100-80	Motorola	
										MCM514100-80	Motorola	
										μPD424100-80	♦ NEC (3591)	40
										MN41C4000-08	Panasonic	
										MN41C4000L-08	Panasonic	
										MN41C4002-08	Panasonic	45
										MN41C4002L-08	Panasonic	
										MN414100AL-08	Panasonic	
										MN414100ASJ-08	♦ Panasonic	45
										MN414100AT-08	♦ Panasonic	
											(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY-RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic-General Purpose										(Cont'd)		
4Mx1	80	CMOS					5	26		MN414100ATT-08 ◊ Panasonic MN414100AWJ-08 ◊ Panasonic	(Cont'd)	
								20		MN424100AL-08 Panasonic		
								26		MN424100ASJ-08 ◊ Panasonic		
								32		MN424100AT-08 ◊ Panasonic		5
								26		MN424100ATT-08 ◊ Panasonic MN424100AWJ-08 ◊ Panasonic		
								20		KM41C4000-08 ◊ Samsung KM41C4001-08 ◊ Samsung KM41C4002-08 ◊ Samsung HYB514100-80 ◊ Siemens		10
								26		TMS44100-80 * TI TC514100A-80 ◊ Toshiba		
										TC514101A-80 ◊ Toshiba TC514102A-80 ◊ Toshiba		15
				TS Enh. Page Mode 1	70	5	18			AAA4M200-08 NMB (3596)		
				TTL Fast Page 0.3	90	5	20		Low Power	MT4C1004JL-8 MicronTech		
				TTL/CMOS Fast Page 2	90	5	20			HY514100-80 ◊ Hyundai(3531)		
				CMOS, Fast Page		5	20			TC514100-80 ◊ Toshiba		20
				CMOS, Nibble Mode		5	20			TC514101-80 ◊ Toshiba		
				CMOS Page Mode		5	18			MT4C1004-8 MicronTech (3579)		
				CMOS Static Column		5	18			MT4C1006-8 MicronTech (3579)		
				CMOS, Static Column		5	20			TC514102-80 ◊ Toshiba		
				NMOS		5				M5M44100-8 ◊ Mitsubishi M5M44101-8 ◊ Mitsubishi M5M44102-8 ◊ Mitsubishi		25
				Static Column		5	18			MB814102-8 ◊ Fujitsu		
100	CMOS						5	26		MB814100(L)-10 Fujitsu MB814101(L)-10 Fujitsu HM514100-10 ◊ Hitachi		30
								18		MT4C1004 883C-10 † MicronTech		
								26		MCM11400-10 Motorola		
								18		MCM51L4100-10 Motorola MCM514100-10 Motorola		
								26		μPD424100-10 ◊ NEC (3591)		35
								18		MN41C4000-10 Panasonic MN41C4002-10 Panasonic		
								20		MN41C4002L-10 Panasonic KM41C4000-10 ◊ Samsung KM41C4001-10 ◊ Samsung KM41C4002-10 ◊ Samsung HYB514100-10 ◊ Siemens		40
								26		TMS44100-10 * TI TC514100A-10 ◊ Toshiba TC514101A-10 ◊ Toshiba TC514102A-10 ◊ Toshiba		45
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—General Purpose										(Cont'd)		
4Mx1	100	CMOS	TTL/CMOS								(Cont'd)	
			Fast Page	2	80	5	20			HY514100-10	Hyundai (3531)	
			CMOS, Fast Page			5	20			TC514100-10	Toshiba	
			CMOS, Nibble Mode			5	20			TC514101-10	Toshiba	
			CMOS Page Mode			5	18			MT4C1004-10	MicronTech (3579)	
			CMOS Static Column			5	18			MT4C1006-10	MicronTech (3579)	5
			CMOS, Static Column			5	20			TC514102-10	Toshiba	
			Fast Page			5	18			MB814100-10	Fujitsu	
			Nibble Mode			5	18			MB814101-10	Fujitsu	
			NMOS			5				M5M44100-10	Mitsubishi	10
										M5M44101-10	Mitsubishi	
										M5M44102-10	Mitsubishi	
			Static Column			5	18			MB814102-10	Fujitsu	
	120	CMOS					5	26		HM514100-12	Hitachi	
								18		MT4C1004		
								26		883C-12	† MicronTech	
			Static Column			5	18			μPD424100-12	NEC (3591)	15
										MB814102-12	Fujitsu	
	150	CMOS					5	20		ED141096C150B	EDI	
4Mx4	50	CMOS					5	28		MT4C40004-5	MicronTech	
										MT4C40005-5	MicronTech	
	60	CMOS					5	28		MT4C40004-6	MicronTech	20
										MT4C40005-6	MicronTech	
			Fast Page	2	90	5	24			MB8116400-60	Fujitsu (3473)	
	70	CMOS					5	28		MT4C40004-7	MicronTech	
										MT4C40005-7	MicronTech	
			Fast Page	2	90	5	24			MB8116400-70	Fujitsu	25
			TTL	Fast Page	1	80	5	24	4K Refresh	μPD4216400-70	NEC (3591)	
						100	5	24	2K Refresh	μPD4217400-70	NEC (3591)	
	80	CMOS					58	5		MT4C40005-8	MicronTech	
			Fast Page	2	90	5	24			MB8116400-80	Fujitsu (3473)	
			TTL	Fast Page	1	70	5	24	4K Refresh	μPD4216400-80	NEC (3591)	30
						90	5	24	2K Refresh	μPD4217400-80	NEC (3591)	
	100	CMOS					5	20		MDM14000-10	Mosaic Semi	
			TTL	Fast Page	1	60	5	24	4K Refresh	μPD4216400-10	NEC (3591)	
						80	5	24	2K Refresh	μPD4217400-10	NEC (3591)	
	120	CMOS					5	20		MDM14000-12	Mosaic Semi	35
4Mx8	80	CMOS					5	30		MCM8L4000-80	Motorola	
										MCM84000-80	Motorola	
	100	CMOS					5	30		MCM84000-10	Motorola	
4Mx9	80	CMOS					5	30		MCM9L4000-80	Motorola	
										MCM94000-80	Motorola	40
	100	CMOS					5	30		MCM8L4000-10	Motorola	
										MCM94000-10	Motorola	
512Kx4 512Kx4	80	CMOS					5	20		512400-08	Micro-C (3578)	
Dynamic—Modules												
3Mx36	70	CMOS	TTL/CMOS	FP	24	1132	5	72		THM362020A-70	Toshiba	
4mx8	70	CMOS	TS	Enh. Page Mode	8	640	5	30		MM4M200J8-07	NMB	45
64Kx4	120						5	22		PEP4064EC4-120	Peps (3610)	
	150						5	22		PEP4064EC4-150	Peps (3610)	
	200						5	22		PEP4064EC4-200	Peps (3610)	
64Kx5	120						5	24		PEP4064EC5-120	Peps (3610)	
	150						5	24		PEP4064EC5-150	Peps (3610)	50
	200						5	24		PEP4064EC5-200	Peps (3610)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
64Kx8	120						5	30		PEP4064EL8-120	Peps (3610)	5
	150						5	30		PEP4064EL8-150	Peps (3610)	
	200						5	30		PEP4064EL8-200	Peps (3610)	
64Kx9	120						5	30		PEP4064EL9-120	Peps (3610)	5
	150						5	30		PEP4064EL9-150	Peps (3610)	
	200						5	30		PEP4064EL9-200	Peps (3610)	
256Kx4	60						5	22		PEP4256EC4-60	Peps (3610)	10
	70						5	22		PEP4256EC4-70	Peps (3610)	
	80						5	22		MT4259-8	MicronTech	
										PEP4256EC4-80	Peps (3610)	15
	100						5	22		MT4259-10	MicronTech	
										PEP4256EC4-100	Peps (3610)	
	120						5	22		MT4259-12	MicronTech	15
256Kx5	60						5	24		PEP4256EC5-60	Peps (3610)	
	70						5	24		PEP4256EC5-70	Peps (3610)	20
	80						5	24		PEP4256EC5-80	Peps (3610)	
	100						5	24		PEP4256EC5-100	Peps (3610)	20
	120						5	24		PEP4256EC5-120	Peps (3610)	
	150						5	24		PEP4256EC5-150	Peps (3610)	
												25
256Kx8	45	CMOS					5			V104HJ8-45	Vitellic (3741, 3747)	
	50	CMOS					5			V104HJ8-50	Vitellic (3747)	25
	60	CMOS					5	30		PEP4256EL8-60	Peps (3610)	
							5	30		MM256KJ8-06	NMB	30
										V104HJ8-60	Vitellic (3741, 3747)	
			TS	Enh. Page Mode	20	600	5	30		MM2801J8-60	NMB	30
			TTL/CMOS	Fast Page	4	180	5	30		HYM58256A-60	Hyundai	
				FP	2	180	5	30		THM82500B-60	Toshiba	
	70	CMOS					5	30		PEP4256EL8-70	Peps (3610)	35
							5	30		MT2D2568-7	MicronTech (3582)	
										MCM8L4256-70	Motorola	35
256Kx8										MCM84256-70	Motorola	
										MM256KJ8-07	NMB	35
										MM2800J8-07	NMB	
										VM53C256K8-70	Vitellic	35
										V104AJ8-70	Vitellic (3741, 3747)	
										V256J8-70	Vitellic (3741, 3747)	
			TS	Enh. Page Mode	20	560	5	30		MM2801J8-70	NMB	40
			TTL/CMOS	Fast Page	4	160	5	160		HYM58256A-70	Hyundai	
							5	30		THM82500A-70	Toshiba	
	80	CMOS					5	30		PEP4256EL8-80	Peps (3610)	45
256Kx8							5	30		MT2D2568-8	MicronTech (3582)	
										MCM8L4256-80	Motorola	45
										MCM84256-80	Motorola	
										MM256KJ8-08	NMB	45
										MM2800J8-08	NMB	
										VM53C256K8-80	Vitellic	50
										V104AJ8-80	Vitellic (3741, 3747)	
										V256J8-80	Vitellic (3741, 3747)	
			TS	Enh. Page Mode	20	520	5	30		MM2801J8-80	NMB	50
			TTL/CMOS	Fast Page	4	140	5	30		HYM58256A-80	Hyundai	
			NMOS				5	30		THM82500A-80	Toshiba	

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
256Kx8	100	CMOS					5	30		PEP4256EL8-100 Peps (3610)	(Cont'd)	5
							5	30		MT2D2568-10 MicronTech (3582)		
										MCM8L4256-10 Motorola		
										MCM84256-10 Motorola		
										VM53C256K8-10 Vitelic		
		NMOS					5	30		THM82500A-10 Toshiba		
	120						5	30		MC41256A8-12 NEC		
										PEP4256EL8-120 Peps (3610)		
										TM4256FL8-12 TI		
	150						5	30		PEP4256EL8-150 Peps (3610)		10
256Kx9	10	NMOS					5	30		THM92500A-10 Toshiba		15
	60	CMOS					5	30		PEP4256EL9-60 Peps (3610)		
							5	30		MM256KQJ9-06 NMB		
										TM256GU9C-6 TI		
		TS		Enh. Page Mode 23		670	5	30		MM2801J9-60 NMB		
		TTL/CMOS		FP 3		270	5	30		THM92500B-60 Toshiba		
	70	CMOS					5	30		PEP4256EL9-70 Peps (3610)		20
							5	30		MT2D2569-7 MicronTech		
										MT3D2569-7 MicronTech (3582)		
										MCM9L4256-70 Motorola		
										MCM94256A-70 Motorola		
										MM256KQJ9-07 NMB		25
										MM2800J9-07 NMB		
										HYM31000-70 Siemens		
										TM256GU9U-70 TI		
										VM53C256K9-70 Vitelic		
										V104AJ9-70 Vitelic (3741, 3747)		
										V256J9-70 Vitelic (3741, 3747)		
		TS		Enh. Page Mode 23		630	5	30		MM2801J9-70 NMB		
		NMOS					5	30		THM92500A-70 Toshiba		30
	80	CMOS					5	30		PEP4256EL9-80 Peps (3610)		35
							5	30		MT2D2569-8 MicronTech		
										MT3D2569-8 MicronTech (3582)		
										MCM9L4256-80 Motorola		
										MCM94256-80 Motorola		
										MCM94256A-80 Motorola		
										MM256KQJ9-08 NMB		40
										MM2800J9-08 NMB		
										HYM31000-80 Siemens		
										VM53C256K9-80 Vitelic		
										V104AJ9-80 Vitelic (3741, 3747)		
										V256J9-80 Vitelic (3741, 3747)		
		TS		Enh. Page Mode 23		585	5	30		MM2801J9-80 NMB		
		TTL/CMOS		Fast Page 6		200	5	30		HYM59256A-80 Hyundai		
		NMOS					5	30		THM92500A-80 Toshiba		45
		TTL					5	30		TM256GU9C-80 TI		
	100	CMOS					5	30		PEP4256EL9-100 Peps (3610)		
							5	30		MT2D2569-10 MicronTech		50
										MT3D2569-10 MicronTech (3582)		
										MCM9L4256-10 Motorola		
										MCM94256-10 Motorola		
										MCM94256A-10 Motorola		
										VM53C256K9-10 Vitelic		
		TTL					5	30		TM256GU9C-10 TI		

(Continued)

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
256Kx9	120	CMOS					5	30		MC41256A9-12	NEC (3591)	5
										PEP4256EL9-120	Peps (3610)	
	150	CMOS					5	30		MT3D2569-12	MicronTech (3582)	
										MT9259-15	MicronTech	
256Kx32	60	CMOS	TTL/CMOS	FP	8	720	5	72		THM322500B-60	Toshiba	10
										TM256BBK32-6	TI	
	60 ns	TTL					5	30		MCM32256-70	Motorola	
										MT8D25632-7	MicronTech (3582)	
	70	CMOS	TTL/CMOS	Fast Page	16	640	5	72		THM322500A-70	Toshiba	
										TM256BBK32-70	TI	
	80	CMOS	TTL/CMOS	FP	8	640	5	72		MCM32256-80	Motorola	
										MT8D25632-8	MicronTech (3582)	
	85	CMOS	TTL/CMOS	Fast Page	16	560	5	72		THM322500A-80	Toshiba	
										TM256BBK32-80	TI	
	100	CMOS	TTL/CMOS	FP	8	560	5	72		MT8D25632-85	MicronTech (3582)	
										MT8D25632-10	MicronTech (3582)	
		CMOS	TTL/CMOS				5	72		MCM32256-10	Motorola	
										THM322500A-10	Toshiba	
		CMOS	TTL/CMOS	FP	8	480	5	72		TM256BBK32-10	TI	
										TM256BBK32-10	TI	
256Kx36	60	CMOS					5	72		MB85336-60	Fujitsu (3477)	
										MM256KQJ36-06A	NMB	
		CMOS	TTL/CMOS	FP	24	1104	5	72		THM362500B-60	Toshiba	
										TM256KBK36B-6	TI	
		CMOS	TTL/CMOS				5	72		TM256KBK36C-6	TI	
										TM256KBK36C-6	TI	
	70	CMOS					5	72		MB85336-70	Fujitsu	
										MT9D25636-7	MicronTech (3582)	
		CMOS	TTL/CMOS	Fast Page	20	800	5	72		MCM36256-70	Motorola	
										MM256KQJ36-07	NMB	
		CMOS	TTL/CMOS				5	72		THM362500A-70	Toshiba	
										THM365120A-70	Toshiba	
		CMOS	TTL/CMOS				5	72		V104AJ36-70	Vitellic (3741, 3747)	
										MT10D25636-7	MicronTech (3582)	
		CMOS	TTL/CMOS				5	72		TM256KBK36B-70	TI	
										TM256KBK36C-70	TI	
256Kx36	80	CMOS					5	72		MB85336-80	Fujitsu (3477)	
										MT9D25636-8	MicronTech (3582)	
		CMOS	TTL/CMOS				5	72		MCM36256-80	Motorola	
										MM256KQJ36-08	NMB	
256Kx36		CMOS	TTL/CMOS				5	72		THM362500A-80	Toshiba	
										THM365120A-80	Toshiba	
		CMOS	TTL/CMOS				5	72		VM55C104K36-80	Vitellic	
										V104AJ36-80	Vitellic (3741, 3747)	
256Kx36		CMOS	TTL/CMOS				5	72		MT10D25636-8	MicronTech (3582)	
										MT10D25636-8	MicronTech (3582)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
256Kx36	80	TTL					5			(Cont'd)		
										TM256KBK36B-80	◊ TI	5
										TM256KBK36C-80	◊ TI	
	85	CMOS					5	72		MT10D25636-85	MicronTech (3582)	
	100	CMOS					5	72		MB85336-10	Fujitsu (3477)	
										MT9D25636-10	MicronTech (3582)	
256Kx40										MCM36256-10	Motorola	10
										THM362500A-10	Toshiba	
										THM365120A-10	Toshiba	
										VM55C104K36-10	Vitellic	
256Kx40		TTL/CMOS								MT10D25636-10	MicronTech (3582)	15
		Fast Page	40		600		5	72				
		TTL					5			TM256KBK36B-10	◊ TI	
										TM256KBK36C-10	◊ TI	
256Kx40	60	CMOS					5	72		MB85253-60	Fujitsu	20
		TTL/CMOS								THM402500B-60	Toshiba	
	70	CMOS					5	72		MB85253-70	Fujitsu	
										MCM40256-70	Motorola	
256Kx40		TTL/CMOS								THM402500A-70	Toshiba	25
		FP	10		800		5	72				
	80	CMOS					5	72		MB85253-80	Fujitsu	
										MCM40256-80	Motorola	
256Kx40		TTL/CMOS								THM402500A-80	Toshiba	30
		FP	10		700		5	72				
	100	CMOS					5	72		MB85253-10	Fujitsu	
										MCM40256-10	Motorola	
256Kx40		TTL/CMOS								THM402500A-10	Toshiba	35
		FP	10		600		5	72				
	60	CMOS					5	72		THM325120B-60	Toshiba	
										TM512CBK32-6	◊ TI	
256Kx40	70	CMOS					5	72		MCM32512-70	Motorola	40
		TTL/CMOS								MT16D51232-7	MicronTech (3582)	
		Fast Page	32		656		5	72				
		FP	16		656		5	72		THM325120A-70	Toshiba	
256Kx40		TTL					5			TM512CBK32-70	◊ TI	45
	80	CMOS					5	72		MCM32512-80	Motorola	
		TTL/CMOS								MT16D51232-8	MicronTech (3582)	
		Fast Page	32		576		5	72				
256Kx40		FP	16		576		5	72		THM325120A-80	Toshiba	50
		TTL					5			TM512CBK32-80	◊ TI	
	85	CMOS					5	72		MT16D51232-85	MicronTech (3582)	
256Kx40	100	CMOS					5	72		MT16D51232-10	MicronTech (3582)	55
										MCM32512-10	Motorola	
		TTL/CMOS										
		FP	16		496		5	72		THM325120A-10	Toshiba	
256Kx40		TTL					5			TM512CBK32-10	◊ TI	60
	60	CMOS					5	72		MB85337-60	Fujitsu	
										MM512K0J36-06	NMB	
256Kx40		TTL/CMOS								THM365120B-60	Toshiba	65
		FP	24		1104		5	72				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
512Kx36	60	TTL					5			(Cont'd)		
										TM512LBK36B-6 ◊ TI	5	
	TM512LBK36C-6 ◊ TI											
	70	CMOS				5	72		MB85337-70 Fujitsu			
									MT18D51236-7 MicronTech (3582)			
	MCM36512-70 Motorola											
	MM512K0J36-07 NMB											
	V104AJ236-70 Vitelic (3741)											
	TTL/CMOS	Fast Page 40	820	5	72		MT20D51236-7 MicronTech (3582)					
	TTL			5			TM512LBK36B-70 ◊ TI					
							TM512LBK36C-70 ◊ TI					
	80	CMOS				5	72		MB85337-80 Fujitsu			
									MT18D51236-8 MicronTech (3582)			
	MCM36512-80 Motorola											
	MM512K0J36-08 NMB											
	VM55C1042K36-80 Vitelic											
	V104AJ236-80 Vitelic (3741)											
	TTL/CMOS	Fast Page 40	720	5	72		MT20D51236-8 MicronTech (3582)					
	TTL			5			TM512LBK36B-80 ◊ TI					
TM512LBK36C-80 ◊ TI												
85	CMOS				5	72		MT20D51236-85 MicronTech (3582)				
100	CMOS				5	72		MB85337-10 Fujitsu				
								MT18D51236-10 MicronTech (3582)				
MCM36512-10 Motorola												
VM5C1042K36-10 Vitelic												
TTL/CMOS	Fast Page 40	620	5	72		MT20D51236-10 MicronTech (3582)						
TTL			5			TM512LBK36B-10 ◊ TI						
						TM512LBK36C-10 ◊ TI						
512Kx40	60	CMOS	TTL/CMOS				5	72		MB85254-60 Fujitsu	30	
										FP 20 920 5 72		
	70	CMOS				5	72		MB85254-70 Fujitsu			
									MCM40512-70 Motorola			
	TTL/CMOS	FP 20 820 5 72		THM405120A-70 Toshiba								
	80	CMOS				5	72		MB85254-80 Fujitsu			
									MCM40512-80 Motorola			
	TTL/CMOS	FP 20 720 5 72		THM405120A-80 Toshiba								
	100	CMOS				5	72		MB85254-10 Fujitsu			
									MCM40512-10 Motorola			
	TTL/CMOS	FP 20 620 5 72		THM405120A-10 Toshiba								
1Mx32	60	CMOS	TTL/CMOS							MT8D132-6 MicronTech (3582)	40	
			Fast Page 16	840	5	72						
1Mx4	80						5	24		PEP1MX4-80 Peps (3610)		
										PEP1MX42-80 Peps (3610)		
(Continued)												

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Dynamic—Modules										(Cont'd)			
1Mx4	80	CMOS					5	26		MCM41000-80	Motorola	(Cont'd)	
	100						5	24		PEP1MX4-100	Peps (3610)	5	
								26		PEP1MX42-100	Peps (3610)		
							24		TM024HAC4-10	TI			
		CMOS					5	26		MCM41000-10	Motorola		
	120						5	24		PEP1MX4-120	Peps (3610)	5	
								26		PEP1MX42-120	Peps (3610)		
								24		TM024HAC4-12	TI		
	150						5	24		TM024HAC4-15	TI		
	1Mx5	80						5	30		PEP1MX5-80	Peps (3610)	10
100							5	30		PEP1MX5-100	Peps (3610)		
120							5	30		PEP1MX5-120	Peps (3610)		
1Mx8	45	CMOS					5			V100HJ8-45	Vitellic (3741, 3747)	15	
	50	CMOS					5			V100HJ8-50	Vitellic (3741, 3747)		
	53	CMOS	TS	Enh. Page Mode 8		640	5	30		MM1M300J8-53	NMB		15
	60	CMOS					5	30		MB85230A-60	Fujitsu		
										MB85260A-60	Fujitsu		
										V100HJ8-60	Vitellic (3741)		
		TTL	Fast Page	2		240	5	30		MC421000A8BA-60	NEC	20	
		TTL/CMOS								HYM581000A-60	Hyundai		
		Fast Page	4		200	5	30		MT2D18-6	MicronTech (3582)			
						16	680	5	30		HYM581000-60	Hyundai	25
		FP	3		330	5	30		THM81070A-60	Toshiba			
			8		720	5	30		THM81000B-60	Toshiba			
									THM81020BL-60	Toshiba	25		
		TTL					5	30		TM024GAD8-6		TI	
									TM124GU8A-6	TI			
	70	CMOS						5	30		MB85230A-70	Fujitsu	30
										MB85260A-70	Fujitsu		
										MT8D18-7	MicronTech (3582)		
										MCM8L1000-70	Motorola	35	
										MCM81000-70	Motorola		
										MCM81000A-70	Motorola		
										MCM81000LH-70	Motorola	35	
										MCM81001-70	Motorola		
										MCM81002-70	Motorola		
										THM81000A-70	Toshiba	40	
									THM81020A-70	Toshiba			
									V100AJ8-70	Vitellic (3741, 3747)			
									MC421000A8BA-70	NEC	40		
									HYM581000A-70	Hyundai			
									MT2D18-7	MicronTech (3582)			
										HYM581000-70	Hyundai	45	
										THM81070A-70	Toshiba		
										THM81070A-80	Toshiba		
										TM024GAD8-70	TI	50	
										TM124GU8A-70	TI		
80								5	30		MH1M08A-80	Mitsubishi	50
											MH1M08A1-8	Mitsubishi	
											MH1M08A2-8	Mitsubishi	
											MH1M08BA0-8	Mitsubishi	
										MH1M08BA1-8	Mitsubishi		
										MH1M08BA2-8	Mitsubishi		
										MH1M08BA2-8	Mitsubishi		
										MH1M08BA2-8	Mitsubishi		
										MH1M08BA2-8	Mitsubishi		
										MH1M08BA2-8	Mitsubishi		
(Continued)													

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
1Mx8	80						5	30		(Cont'd)		
										MH1M09A0-8	Mitsubishi	
										PEP1MX8-80	Peps (3610)	
		CMOS					5	30		MB85230-80	Fujitsu	5
										MB85231-80	Fujitsu	
										MB85260-80	Fujitsu	
										MT8D18-8	MicronTech (3582)	
										MCM8L1000-80	Motorola	
										MCM81000-80	Motorola	
										MCM81000A-80	Motorola	
										MCM81001-80	Motorola	10
										MCM81002-80	Motorola	
										TM024GAD8-80	TI	
										THM81000A-80	Toshiba	
										THM81020A-80	Toshiba	
										V100AJ8-80	Vitellic (3741, 3747)	15
		TTL	Fast Page	2	180	5	24			MC421000A8BA-80	NEC	
		TTL/CMOS	Fast Page	4	160	5	30			HYM581000A-80	Hyundai	
					180	5	30			MT2D18-8	MicronTech (3582)	
				16	520	5	30			HYM581000-80	Hyundai	
		TTL				5	30			TM124GU8A-80	TI	20
85		NMOS					5	30		THM81020-85	Toshiba	
										THM81021-85	Toshiba	
100							5	30		MH1M08A-10	Mitsubishi	
										MH1M08A1-10		
										MH1M08A2-10	Mitsubishi	25
										MH1M08BA0-10	Mitsubishi	
										MH1M08BA1-10	Mitsubishi	
										MH1M08BA2-10	Mitsubishi	
										MH1M09A0-10	Mitsubishi	
										MCM1002-10	Motorola	30
										PEP1MX8-100	Peps (3610)	
		CMOS					5	30		MB85230-10	Fujitsu	
										MB85231-10	Fujitsu	
										MB85260-10	Fujitsu	
										MT8D18-10	MicronTech (3582)	35
										MCM8L1000-10	Motorola	
										MCM81000-10	Motorola	
										MCM81000A-10	Motorola	
										MCM81000LH-10	Motorola	
										MCM81001-10	Motorola	40
										MCM81002-10	Motorola	
										TM024GAD8-10	TI	
										THM81000A-10	Toshiba	
										THM81020A-10	Toshiba	
		TTL/CMOS	Fast Page	4	160	5	30			MT2D18-10	MicronTech (3582)	45
			FP	3	210	5	30			THM81070A-10	Toshiba	
		NMOS				5	30			THM81020-10	Toshiba	
		TTL				5	30			TM124GU8A-10	TI	
		Module				5	30			PEP1MX8-120	Peps (3610)	50
		NMOS				5	30			THM81020-12	Toshiba	
1Mx9	10	NMOS					5	30		THM91050A-10	Toshiba	
	45	CMOS					5			V100HJ9-45	Vitellic (3741, 3747)	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

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◊ Available in Surface Mount Package

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• MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
1Mx9	50	CMOS					5			V100HJ9-50	Vitellic (3741, 3747)	5
	53	CMOS	TS	Enh. Page Mode 9	720	5	30			MM1M30QJ9-53	NMB	
	60	CMOS				5	30			MB85235A-60	Fujitsu	
										MB85265A-60	Fujitsu	
										HYM91000S-60	Siemens	
										V100HJ9-60	Vitellic (3741)	10
		TS		Enh. Page Mode 9	810	5	30			MM4M20QJ9-06	NMB	
		TTL		Fast Page 3	330	5	30			MC421000A9BA-70	NEC	
		TTL/CMOS		Fast Page 6	300	5	30			MT3D19-6	MicronTech (3582)	
				18	585	5	30			HYM591000-80	Hyundai	
70					285	5	30			HYM591000A-60	Hyundai	15
				FP	3	330	5	30		THM91070A-60	Toshiba	
					9	810	5	30		THM91000B-60	Toshiba	
										THM91020BL-60	Toshiba	
		TTL					5	30		TM024EAD9-6	TI	
										TM124EU9B-6	TI	20
										TM124EU9C-6	TI	
										MB85235A-70	Fujitsu	
										MB85265A-70	Fujitsu	
										MT9D19-7	MicronTech (3582)	
80										MCM91000-70	Motorola	25
										MCM91000A-70	Motorola	
										MCM91001-70	Motorola	
										MCM91002-70	Motorola	
										HYM91000-70	Siemens	
										THM91000A-70	Toshiba	30
										THM91010A-70	Toshiba	
										THM91020A-70	Toshiba	
										V100AJ9-70	Vitellic (3741, 3747)	
										MC421000A9BA-80	NEC	
80										MT3D19-7	MicronTech (3582)	35
										HYM591000-70	Hyundai	
										HYM591000A-70	Hyundai	
										THM91070A-70	Toshiba	
										THM91050A-70	Toshiba	40
										TM024EAD9-70	TI	
										TM124EU9C-70	TI	
										MH1M09A1-8	Mitsubishi	
										MH1M09A2-8	Mitsubishi	
										MH1M09B1-8	Mitsubishi	
80										MH1M09B2-8	Mitsubishi	45
										PEP1MX9-80	Peps (3610)	
										MB85235-80	Fujitsu	
										MB85236-80	Fujitsu	
										MB85265-80	Fujitsu	
										MT9D19-8	MicronTech (3582)	50
										MCM91000-80	Motorola	
										MCM91000A-80	Motorola	
										MCM91001-80	Motorola	
										MCM91002-80	Motorola	
80										HYM91000-80	Siemens	55
										TM024EAD9-80	TI	
										THM91000A-80	Toshiba	
										THM91010A-80	Toshiba	
												(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line									
Dynamic—Modules										(Cont'd)											
1Mx9	80	CMOS					5	30		(Cont'd)											
										THM91020A-80	Toshiba	5									
										V100AJ9-80	Vitellic (3741, 3747)										
										85	CMOS						5	30			
	100	CMOS					5	30													
		TTL/CMOS																			
											Fast Page 6		250	5	30	MT3D19-8	MicronTech (3582)				
											18		225	5	30	HYM591000A-80	Hyundai				
											FP 3		240	5	30	THM91070A-80	Toshiba				
NMOS							5	30													
	TTL																				
	85	NMOS					5	30													
	TTL																				
	85	NMOS					5	30													
	TTL																				
	85	NMOS					5	30													
	TTL																				
	85	NMOS					5	30													
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	85	NMOS					5	30													
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	85	NMOS					5	30													
	TTL																				
	85	NMOS					5	30													
	TTL																				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
1Mx32	60	CMOS	TTL/CMOS	FP	8	960	5	72		THM321000A-60	Toshiba	5
										TM124BBK32-6	◊ TI	
	70	CMOS	TTL	Fast Page	8	800	5	72		MC421000A32-70	NEC	
										MT8D132-7	MicronTech (3582)	
										THM321000A-70	Toshiba	
										TM124BBK32-70	◊ TI	
	80	CMOS	TTL	Fast Page	8	720	5	72		MCM32100-80	Motorola	10
										MC421000A32-80	NEC	
										MT8D132-8	MicronTech (3582)	
										THM321000A-80	Toshiba	
	100	CMOS	TTL	Fast Page	16	800	5	72		THM321020-80	Toshiba	
										TM124BBK32-80	◊ TI	
										MT8D132-10	MicronTech (3582)	
										MCM32100-10	Motorola	
	100	CMOS	TTL/CMOS	FP	3	600	5	72		THM321000A-10	Toshiba	15
										THM321020-10	Toshiba	
										TM124BBK32-10	◊ TI	
1Mx33	60	CMOS	TTL/CMOS	FP	9	1050	5	72		THM331020A-60	Toshiba	20
	70	CMOS	TTL/CMOS	FP	9	880	5	72		THM331020A-70	Toshiba	
	80	CMOS	TTL/CMOS	FP	9	750	5	72		THM331020A-80	Toshiba	
	100	CMOS	TTL/CMOS	FP	9	660	5	72		THM331020A-10	Toshiba	
1Mx36	10	CMOS	TTL/CMOS	FP	12	840	5	72		THM361020A-10	Toshiba	25
	60	CMOS	TS	Enh. Page Mode	12	940	5	72		MM1MOJ36-60	NMB	
										THM361000A-60	Toshiba	
										THM361020A-60	Toshiba	
										THM361080A-60L	Toshiba	
	70	CMOS	TTL	Fast Page	12	1120	5	72		TM124MBK36A-6	◊ TI	30
										TM124MBK36B-6	◊ TI	
										MT9D136-7	MicronTech	
										MM1MOJ36-70	NMB	
	80	CMOS	TTL	Fast Page	12	1120	5	72		MC421000A36-70	NEC	
										MT120136-7	MicronTech	35
										THM361000A-70	Toshiba	
										THM361020A-70	Toshiba	
										THM361080A-70L	Toshiba	
	80	CMOS	TTL	Fast Page	12	1120	5	72		TM124MBK36A-7	◊ TI	40
										TM124MBK36B-7	◊ TI	
										MB85346-80	Fujitsu (3478)	
	80	CMOS	TTL	Fast Page	12	1120	5	72		MT9D136-8	MicronTech	40
										MCM36100-80	Motorola	
	80	CMOS	TTL	Fast Page	12	1120	5	72		HYM361020S-80	Siemens	(Continued)

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY-RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic-Modules										(Cont'd)		
1Mx36	80	CMOS	TS	Enh. Page Mode 12	740	5	72			(Cont'd)		
										MM1M0J35-80 ◊ NMB MM1M0J36-80 NMB		
			TTL	Fast Page 12	1000	5	72			MC421000A36-80 NEC		
			TTL/CMOS	Fast Page 24 FP 12	1000 960	5	72			MT120136-8 MicronTech THM361000A-80 Toshiba THM361020A-80 Toshiba		5
					961	5	72			THM361080A-80L Toshiba		
			NMOS			5	72			HB56D136B-8 Hitachi MH1M36DJ-8 ◊ Mitsubishi		10
			TTL			5				TM124MBK36A-8 ◊ TI TM124MBK36B-8 ◊ TI		
	85	CMOS					5	72		MT9D136-85 MicronTech		
	100	CMOS					5	72		MB85346-10 Fujitsu (3478) MT9D136-10 MicronTech MCM36100-10 Motorola HYM361020S-10 Siemens		15
			TTL/CMOS	FP 12	840 841	5	72			THM361000A-10 Toshiba THM361080A-10L Toshiba		20
			NMOS			5	72			HB56D136B-10 Hitachi MH1M36DJ-10 ◊ Mitsubishi		20
										THM361020-10 Toshiba		
			120	CMOS			5	72		MB85346-12 Fujitsu (3478)		
				NMOS			5	72		HB56D136B-12 Hitachi		
1Mx40	60	CMOS	TTL/CMOS	FP 10	1200	5	72			THM401000A-60 Toshiba MC421000AA40-70 NEC		25
			TTL/CMOS	FP 10	1000	5	72			THM401000A-70 Toshiba		
	70	CMOS	TTL	Fast Page 10	1000	5	72			MCM40100-80 Motorola MC421000AA40-80 NEC		30
			NMOS			5	72			THM401020-80 Toshiba		
	80	CMOS	TTL	Fast Page 10	900	5	72			MCM40100-10 Motorola		30
			TTL/CMOS	FP 10	850 976	5	72			THM401000A-80 Toshiba THM401000A-10 Toshiba		35
			NMOS			5	72			THM401020-10 Toshiba		
	100	CMOS				5	72			MCM40100-10 Motorola		35
2Mx8	80					5	64			PEP2MX8-80 Peps (3610)		
	100					5	64			PEP2MX8-100 Peps (3610)		
	120					5	64			PEP2MX8-120 Peps (3610)		
2Mx32	60	CMOS	TTL/CMOS	Fast Page 32	886	5	72			MT16D232-6 MicronTech (3582) THM322020A-60 Toshiba		40
				FP 16	976	5	72			MC422000A32-70 NEC		
			TTL/CMOS	Fast Page 32	816	5	72			MT16D232-7 MicronTech (3582) THM322020A-70 Toshiba		40
	70	CMOS	TTL	Fast Page 16	860	5	72			MCM32200-80 Motorola MC422000A32-80 NEC		40
	80	CMOS	TTL	Fast Page 16	780	5	72					

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◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Dynamic—Modules										(Cont'd)			
2Mx32	80	CMOS	TTL/CMOS							(Cont'd)			
			Fast Page	32	736	5	72	MT16D232-8	MicronTech (3582)	5			
			FP	16	696	5	72	THM322020A-80	Toshiba				
											MT16D232-10	MicronTech (3582)	
	100	CMOS									MCM32200-10	Motorola	
			TTL/CMOS							THM322020A-10	Toshiba		
			FP	16	616	5	72						
	2Mx36	60	CMOS	TS	Enh. Page Mode						MM2MOJ36-60	NMB	10
					24	980	5	72	MM2MOJ36-80	NMB			
						880	5	72					
TTL/CMOS									THM362020A-60	Toshiba			
		FP	24	1332	5	72	THM362040A-60	Toshiba	15				
70		CMOS					5	72		MT18D236-7	MicronTech		
			TS	Enh. Page Mode							MM2MOJ36-70	NMB	
				24	880	5	72	MC422000A36-70		NEC			
			TTL		Fast Page	24	1180	5	72	MT24D236-7	MicronTech		
		Fast Page		48	1144	5	72	THM362040A-70	Toshiba	20			
		FP		24	1132	5	72						
80		CMOS					5	72	MB85347-80		Fujitsu		
									MT18D236-8		MicronTech		
									MCM36200-80	Motorola			
									HYM362020S-80	Siemens			
		TTL	Fast Page	24	1060	5	30	MC422000A36-80	NEC	25			
		TTL/CMOS						MT24D236-8	MicronTech				
		Fast Page		48	1024	5	72	THM362020A-80	Toshiba				
		FP		24	972	5	72	THM362040A-80	Toshiba				
		NMOS					5	72	HB56D236B-8	Hitachi	30		
								THM362020-80	Toshiba				
100	CMOS					5	72	MB85348-10	Fujitsu				
								MT18D236-10	MicronTech				
								MCM36200-10	Motorola				
								THM362020A-10	Toshiba				
		TTL/CMOS						THM362040A-10	Toshiba	35			
		FP		24	852	5	72						
		NMOS					5	72	HB56D236B-10		Hitachi		
								THM362020-10	Toshiba				
2Mx40	60	CMOS	TTL/CMOS							THM402020A-60	Toshiba	40	
			FP	20	1220	5	72	MC422000AA40-70	NEC				
	70	CMOS	TTL	Fast Page		20	1060	5	30				
				TTL/CMOS						THM402020A-70	Toshiba		
			FP	20	1020	5	72						
	80	CMOS					5	72	MCM40200-80	Motorola			
			TTL	Fast Page		20	960	5	72	MC422000AA40-80	NEC		
				TTL/CMOS						THM402020A-80	Toshiba		
					FP	20	a870	5	72	MCM40200-10	Motorola		
	100	CMOS					5	72					
TTL/CMOS							THM402020A-10	Toshiba					
		FP		20	770	5	72						
2097152x36	100	CMOS					5	72	HYM362020S-10			Siemens	
262144x9	80	CMOS					5	30	HYM39500S-80			Siemens	
4Mx1	80	CMOS					5	26	PEP4MX1-80	Peps (3610)	45		
							5	26	PEP4MX1Z-80	Peps (3610)			
					5	26	MCM11400-80	Motorola					
	100	CMOS					5	26	PEP4MX1-100	Peps (3610)			
							5	26	PEP4MX1Z-100	Peps (3610)			
			CMOS					5	26	MCM11400-10		Motorola	

(Continued)

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
4Mx1	120						5	26		(Cont'd)		
								23		PEP4MX1-120 Peps (3610)		
4Mx4	70	CMOS	TTL	Fast Page	8	800	5	30		MC424000A8BA-70	NEC	
	80	CMOS	TTL	Fast Page	8	720	5	30		MC424000A8BA-80	NEC	
4Mx8	50	CMOS	TS	Enh. Page Mode	8	800	5	30		PEP4MX8 Peps (3610)		5
								30		MM4M200J8-05	NMB	
	60	CMOS	TS	Enh. Page Mode	8	720	5	30		MM4M200J8-06	NMB	
								30		MC424000A8BA-60	NEC	
			TTL	Fast Page	8	960	5	30				
								30				
			TTL/CMOS	FP	8	960	5	30		THM84000A-60	Toshiba	
								30		THM84020AL-60	Toshiba	10
			TTL					5		TM4100GBD8-6	TI	
								30				
	70	CMOS		TTL/CMOS	FP	8	800	5	30	MT8D48-7 MicronTech (3582)		
								30		THM84000A-70	Toshiba	
80								5		TM4100GBD8-70	TI	15
								30				
								5		MB85280-80	Fujitsu	
								30		MB85281-80	Fujitsu	
								5		MB85290-80	Fujitsu	
								30		MT8D48-8 MicronTech (3582)		
								5		MCM8L4000-80	Motorola	20
								30		MCM84000-80	Motorola	
								5		MCM84000A-80	Motorola	
								30				
								5		MM4M200J8-08	NMB	
								30		THM84000A-80	Toshiba	
100								5		THM84020AL-80	Toshiba	25
								30				
								5		HB56A48A-8	Hitachi	
								30		THM84000-80	Toshiba	
								5		TM4100GBD8-80	TI	
								30				
								5		MB85280-10	Fujitsu	30
								30		MB85281-10	Fujitsu	
								5		MB85290-10	Fujitsu	
								30		MT8D48-10 MicronTech (3582)		
								5		MCM8L4000-10	Motorola	35
								30		MCM84000-10	Motorola	
120								5		MCM84000A-10	Motorola	
								72		THM84000A-10	Toshiba	
								5		HB56A48A-10	Hitachi	
								30		THM84000-10	Toshiba	
								5		TM4100GBD8-10	TI	
								30				
								5		HB56A48A-12	Hitachi	40
								30				
4Mx9	60	CMOS	TTL	Fast Page	9	1080	5	30		PEP4MX9 Peps (3610)		
								30		MC424000A9BA-60	NEC	
								5		HYM594000-60	Hyundai	
								30		THM94000A-60	Toshiba	
								5		TM4100EBD9-6	TI	
								30				45

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‡ High Rad Resistance

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
4Mx9	70	CMOS					5	30		MT9D49-7	MicronTech (3582)	5
	80	CMOS					5	30		MT9D49-8	MicronTech (3582)	10
	100	CMOS					5	30		MT9D49-10	MicronTech (3582)	25
4Mx18	60	CMOS	TTL/CMOS	FP	18	2160	5	72		THM184080A-60L	Toshiba	40
	70	CMOS	TTL/CMOS	FP	18	1800	5	72		THM184080A-70L	Toshiba	40
	80	CMOS	TTL/CMOS	FP	18	1531	5	72		THM184080A-80L	Toshiba	40
	100	CMOS	TTL/CMOS	FP	18	1351	5	72		THM184080A-10L	Toshiba	40

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Modules										(Cont'd)		
4Mx33	60	CMOS	TTL/CMOS	FP	33	3960	5	72		THM334080A-60	Toshiba	5
	70	CMOS	TTL/CMOS	FP	33	3300	5	72		THM334080A-70	Toshiba	
	80	CMOS	TTL/CMOS	FP	33	2805	5	72		THM334080A-80	Toshiba	
	100	CMOS	TTL/CMOS	FP	33	2475	5	72		THM334080A-10	Toshiba	
4Mx36	60	CMOS	TTL/CMOS	FP	36	4320	5	72		THM364080A-60	Toshiba	5
	70	CMOS	TTL/CMOS	FP	36	3600	5	72		THM364080A-70	Toshiba	
	80	CMOS	TTL/CMOS	FP	12	3063	5	72		THM364080A-80	Toshiba	
	100	CMOS	TTL/CMOS	FP	12	2703	5	72		THM364080A-10	Toshiba	
4194304x9	100	CMOS					5	30		HYM94000S-10	Siemens	
Dynamic—Multiport												
64Kx4	100	CMOS, 2-Port					5	24		V64KX4-10	Micro-C	10
										MT42C4064-10	MicronTech (3580)	
		CMOS, 2-port					5	24		MT42C4064		
	120	2-Port Module					5	31		883C-10	MicroTech	15
										HM53461-10	Hitachi	
		CMOS 2-Port					5	24		41264-12	Krueger	
	150									μPD41264-12	NEC (3591)	15
		CMOS, 2-Port					5	24		MT42C4064-12	MicronTech (3580)	
		CMOS, 2-port					5	24		MT42C4064		
	200	NMOS					5	24		883C-12	MicroTech	20
										MB81461-12	Fujitsu	
										SMJ4461-12	* TI	
	250	CMOS, 2-Port					5	24		MT42C4064-15	MicronTech (3580)	20
		CMOS, 2-port					5	24		MT42C4064		
		CMOS 2-Port, Refurbished					5	24		883C-15	MicroTech	
	300									41264-15	Krueger	25
		NMOS					5	24		SMJ4461-15	* TI	
		2-Port Module					5	31		HM53461-15	Hitachi	
128Kx8	80	CMOS, 2-port					5	40		V64KX4-15	Micro-C	25
										μPD41264-15	NEC (3591)	
		CMOS, 3-port					5	52		MT42C8128-8	MicronTech (3580)	
	100	TTL					5			MT43C8129-8	MicroTech (3580)	30
		2-port Video					5	40		TMS48C121-80	* TI	
										TC528126B-80	Toshiba	
	150									TC528128B-80	* Toshiba	30
	200	CMOS					5	40		TC528126A-10	Toshiba	35
										TC528128A-10	* Toshiba	
		CMOS, 2-port					5	40		MT42C8127-10	MicroTech (3580)	
	250									MT42C8128-10	MicronTech	35
		CMOS, 3-port					5	52		MT43C8129-10	MicroTech (3580)	
		NMOS					5			M5M482128-10	Mitsubishi	
	300	TTL					5			TMS48C121-10	* TI	40
		2-port Video					5	40		TC528126B-10	Toshiba	
										TC528128B-10	* Toshiba	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Multiport										(Cont'd)		
128Kx8	120	CMOS					5	40		TMS48C121-12 * TI TC528126A-12 Toshiba TC528128A-12 * Toshiba	(Cont'd)	
			CMOS, 2-port				5	40	MT43C8128-12 MicronTech MT42C8127-12 * MicronTech (3580)	5		
			CMOS, 3-port				5	52	MT43C8129-12 * MicronTech (3580)			
	256Kx4	80	CMOS, 2-port				5	28	MT42C4255-8 * MicronTech (3580) MT42C426-8 MicronTech			
				CMOS, 3-port				5	40	MT43C4258-8 * MicronTech		
				2-port Video				5	28	TC524256B-80 * Toshiba TC524258B-80 * Toshiba TC524259B-80 * Toshiba	10	
256Kx4	100	CMOS					5	28	MT42C4255 883C-10 † MicronTech MT42C4256 883C-10 † MicronTech TC524258A-10 Toshiba	15		
			CMOS, 2-port				5	28	MT42C4255-10 * MicronTech (3580) MT42C4256-10 MicronTech (3580)			
			CMOS, 3-port				5	40	MT43C4258-10 * MicronTech			
		120	CMOS					5	28	V256KX4-10 Micro-C TC524256B-10 * Toshiba TC524258B-10 * Toshiba (3718) TC524259B-10 * Toshiba	20	
				2-port Video				5	28			
				CMOS, 2-port				5	28	MT42C4255 883C-12 † MicronTech MT42C4256 883C-12 † MicronTech TC524258A-12 Toshiba (3718)	25	
		150	CMOS					5	28	MT42C4255-12 * MicronTech (3580) MT42C4256-12 MicronTech (3580)		
				CMOS, 3-port				5	40	MT43C4258-12 * MicronTech		
				CMOS				5	28	MT42C4255 883C-15 † MicronTech MT42C4256 883C-15 † MicronTech	30	
	256Kx8	70	CMOS, 2-port					5	40	MT42C8256-7 * MicronTech (3580)		
		80	CMOS, 2-port					5	40	MT42C8256-8 * MicronTech (3580)		
		100	CMOS, 2-port					5	40	MT42C8256-10 * MicronTech (3580)		
Dynamic—Video												
64Kx4	80	CMOS					5	24		GM53C261-80 GoldStar V53C261-80 Vitelec (3746)	35	
	100	CMOS					5	24		GM53C261-10 GoldStar KM424C64-10 Samsung V53C261-10 Vitelec (3741, 3746) (Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Video										(Cont'd)		
64Kx4	120	CMOS					5	24		(Cont'd)		
										GM53C261-12	GoldStar	5
										KM424C64-12	Samsung	
										V53C261-12	Vitellic (3746)	
		2-Port Module					5	31		HM53461-12	Hitachi	
										V64KX4-10	Micro-C	
128Kx8	80	CMOS, 3-port					5	52		MT43C8128-8	MicronTech (3580)	
										TMS48C121-80		
										° TI		
										TC528126B-80		
	80	TTL					5	40		° Toshiba		
										TC528128B-80		
	100	CMOS					5	40		° Toshiba		
										TC528126A-10	° Toshiba	10
	100	CMOS, 3-port					5	52		TC528128A-10	° Toshiba	
										MT43C8128-10	MicronTech	
										TMS48C121-10		
										° TI		
256Kx4	80	CMOS, 3-port					5	40		TC528126B-10	° Toshiba	
										° Toshiba		
										TC528128B-10		
										° Toshiba		
	100	CMOS					5	40		TC528128B-10		
										° Toshiba		
										*† Toshiba		15
										TMS48C121-12		
	80	CMOS, 3-port					5	52		° TI		
										TC528126A-12	° Toshiba	
										TC528128A-12		
										° Toshiba		
	100	CMOS, 3-port					5	52		MT43C8128-12	MicronTech	
										MT43C4257-8	MicronTech (3580)	20
										TC524256B-80		
										° Toshiba		
	100	CMOS					5	28		TC524258B-80		
										° Toshiba		
										TC524259B-80		
										° Toshiba		
	100	CMOS Video					5	28		MVM4256-10	Mosaic Semi	
										TC524256A-10	° Toshiba	
										TC524258A-10	° Toshiba	
										° Toshiba		25
	100	CMOS, Video					5	28		MSM514252-10	OKI (3599)	
										TMS44C251-10		
										° TI		
										TC524256-10	° Toshiba	
	100	CMOS, 3-port					5	40		MT43C4257-10	MicronTech	
										TC524256B-10		
										° Toshiba		
										TC524258B-10		
	120	CMOS					5	28		° Toshiba		
										TC524259B-10		
										° Toshiba		
										° Toshiba		
	120	CMOS, Video					5	28		MVM4256-12	Mosaic Semi	
										TC524256A-12	° Toshiba	
										TC524258A-12	° Toshiba	
											(3718)	
	150	CMOS					5	28		V256KX4-12	Micro-C	
										TMS44C251-12		
										° TI		
										TC524256-12	° Toshiba	
	150	CMOS Video RAM					5	28		MSM514252-12	OKI (3599)	
										° Toshiba		
										MT43C4257-12	MicronTech	40
										° Toshiba		
256Kx8	70	CMOS					5	40		MVM4256-15	Mosaic Semi	
										° TI		
										V53C851-70	Vitellic (3746)	
										V53C851-80	Vitellic (3746)	45
	80	CMOS					5	40		MVM8256-10	Mosaic Semi	
										V53C851-100	Vitellic (3746)	
	100	CMOS					5	40				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Mode of Operation	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Dynamic—Video										(Cont'd)		
256Kx8										(Cont'd)		
	120	CMOS					5	40		MVM8256-12	Mosaic Semi	
	150	CMOS					5	40		MVM8256-15	Mosaic Semi	
Static—General Purpose												
4x4	40	TTL					5	16		SN54LS670 †	Motorola	
										SN74LS170	Motorola	5
										SN74LS670	Motorola	
										DM54LS670 †	National	
										DM74LS670	National	
										54LS170 †	National	
										54LS670 †	National	10
										54170 †	National	
										74LS170 ◊	National	
										74LS670 ◊	National	
										74170	National	
										74LS170	SGS-Thomson	
										74LS670	SGS-Thomson	15
										54LS170 †	Signetics	
										54LS670 †	Signetics	
										74LS670	Signetics	
										SN54LS170 ◊†	Ti	
										SN54LS670	◊† Ti	20
										SN54170 †	Ti	
										SN74LS170	Ti	
										SN74LS670	Ti	
										SN74170	Ti	
	1500	CMOS					3-15	24		MC14580BC	Motorola	25
8x2	50	TTL					5	24		SN74172	Ti	
16x4	5	ECL					-4.5	16		F100402 ◊	National	
	6	ECL					-5.2	16		MC10H145	Motorola	
	7	ECL					-4.5	24		F100145	◊ National	30
	9	ECL					-5.2	16		F10145A	◊ National	
	15	CMOS					5	16		CY7C189-15C ◊	Cypress	
										CY7C190-15C ◊	Cypress	
	25	CMOS					5	16		CY27S03A-25M	† Cypress	
										CY27S03A-25C	Cypress	35
										CY27S03AC †	Cypress	
										CY27S03AM †	Cypress	
										CY27S07A-25C	◊ Cypress	
										CY27S07A-25M	*† Cypress	
										CY27S07AC *†	Cypress	40
										CY7C189-25C ◊	Cypress	
										CY7C189-25M	◊† Cypress	
										CY7C190-25C ◊	Cypress	
										CY7C190-25M	◊† Cypress	
		TTL					5	16		AM27S07C	AMD	45
										DM74S189A	National	
30		TTL					5	16		AM27S07M †	AMD	
										DM54S189A	National	
35		CMOS					5	16		CY27S03-35C	Cypress	50
										CY27S03-35M †	Cypress	
										CY27S03M †	Cypress	
										CY27S07-35C *	Cypress	
										CY27S07-35M	*† Cypress	
										CY27S07M *†	Cypress	
										CY74S189-35C	Cypress	
		TTL					5	16		AM27S02C	AMD	55
										AM27S03C	AMD	
										DM74S189	National	
										DM74S289	National	
										N3101A	Signetics	
										74S189	Signetics	60

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16x4	40	TTL					5	18		DM75S68 DM75S68A DM85S68	National National National	(Cont'd)
	45	TTL					5	16		AM27S02M AM27S03M	† AMD † AMD	5
	50	TTL					5	16 28 16		DM54S189 IDM29705C N82S25 S3101A 54S189	† National † National Signetics † Signetics † Signetics	10
	53	TTL					5	28		IDM29705	† National	15
	55	TTL					5	16		AM27LS07C AM27LS07M	AMD † AMD	
	60	TTL					5	16		DM8589 S82S25 SN74LS189A SN74LS219A	National † Signetics TI TI	
	65	CMOS					5	16		CY27LS03-65M CY27LS03M CY27S07AM	† Cypress † Cypress † Cypress	
	80	TTL					5	16		DM7589	† National	
	140	CMOS					5	16		MM54C989 MM74C989	† National National	25
	650	CMOS					5	16		CD4011BE MM74C89	Harris National	
32xK	85	CMOS					5	28		VC62256A-85L	Micro-Comp	30
32x8	300 ns *	CMOS					10	18		CDP1824 HB1824 HC1824	† Harris † Hughes ◊ Hughes	
	600 ns *	CMOS					5 10	18 18		CDP1824C HB1824C HC1824C	† Harris † Hughes ◊ Hughes	
64x4	12	CMOS	TTL	Common	30	125	5	24		P4C1258-12C	◊ Performance	
64x8	800	CMOS					5	22		CDP1826C	Harris	
64x9	35	TTL					5	28		N82S19	Signetics	35
	45	TTL					5	28		MBM93419 93419	Fujitsu Rochester	
	60	TTL					5	28		S82S19	† Signetics	
	80	TTL					5	28		S82S09	† Signetics	
65Kx1	15	CMOS	TTL	Common	40	120	5	22		MT5C6401-15	MicronTech	
65Kx4	12	BICMOS	TTL/CMOS	Common	10	40	5	28		TC55B465-12	◊ Toshiba (3723)	40
128x8	100	CMOS					5	8		CDP68HC68R1	Harris	45
	250	CMOS					10	24		CDP1823	Harris	
		TTL					5	24		HB1823 HC1823	† Hughes Hughes	
	250 ns *	NMOS					5	24		MCM68B10	Motorola	
	360	NMOS					5	24		MCM68A10	Motorola	
	450	CMOS					5	24		CDP1823C	Harris	50
		NMOS					5	24		HM46810	Hitachi	
							5	24		MCM6810	Motorola	
256x1	35	TTL					5	16		AM27LS00AC	AMD	55
	40	TTL					5	16		N82LS16 74LS301	Signetics Signetics	
	45	TTL					5	16		AM27LS00AM AM27LS00C	† AMD AMD	
	50	TTL					5	16		N82S16 N82S17 74S301	Signetics Signetics Signetics	
	55	TTL					5	16		AM27LS00M	† AMD	
	60	TTL					5	16		S82LS16	† Signetics	60
	70	TTL					5	16		54LS301 54S301	† Signetics † Signetics	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256x1	120μs	CMOS					5	3		DS2223	Dallas	5
	400	CMOS					3-15	16		MM54C200 ‡ Micro		
										MM54C200 † National		
										MM74C200	National	
	1000	PMOS					5,-9	16		NCM1101Z	NCM	
256x4	2	GaAs					-5.2	40		12G014	TriQuint	10
	2.5	GaAs					5			12G014-2	TriQuint	
	3	ECL 10K					-5.2			SY10422-3	Synergy (3706)	
		ECL 100K					-4.5			SY100422-3	Synergy (3706)	
		ECL 101K					-5.2			SY101422-3	Synergy (3706)	
		10K ECL					-5.2	24		CY10E422-3C	Cypress	
		10K/10KH ECL					-4.5	24		CY10E422-3C ◊ Aspen		
		100K ECL					-5.2	24		CY100E422-3C	◊ Aspen	
							-4.2	24		CY100E422-3C	Cypress	
	3.5	GaAs					5			12G014-3	TriQuint	
	5	ECL					-4.5	24		MBM100422A-5	Fujitsu	
							-5.2	24		MBM10422A-5	Fujitsu	
		ECL 10K					-5.2			SY10422-5	Synergy (3706)	
		ECL 100K					-4.5			SY100422-5	Synergy (3706)	
		ECL 101K					-5.2			SY101422-5	Synergy (3706)	
		GaAs E/D Mode					5	22		VS12G422TD-5	Vitesse	
		10K ECL					-5.2	24		CY10E422-5C	Cypress	
							5.2	24		CY10E422L-5C	Cypress	
							-5.2	24		CY10E422L-5M	† Cypress	
		10K/10KH ECL					-4.5	24		CY10E422-5C ◊ Aspen		
		100K ECL					-5.2	24		CY100E422-5C	◊ Aspen	
										CY100E422L-5C	◊ Aspen	
							-4.2	24		CY100E422-5C	Cypress	
		100K ECL					-4.5	24		CY100E422L-5C	◊ Cypress	
6		GaAs E/D Mode					5	22		VS12G422TD-6	Vitesse	30
7		CMOS					5	24		CY7C123-7C	Cypress	
		ECL					-4.5	24		MBM100422A-7	Fujitsu	35
							-5.2	24		MBM10422A-7	Fujitsu	
							-4.5	24		μPB100422-7 ◊ NEC	(3592)	40
							-5.2	24		μPB10422-7	NEC (3592)	
		ECL 10K					-5.2			SY10422-7	Synergy	45
		ECL 100K					-4.5			SY100422-7	Synergy	
		ECL 101K					-5.2			SY101422-7	Synergy	50
		10K ECL					-5.2	24		CY10E422L-7C	Cypress	
										CY10E422L-7M	† Cypress	55
		100K ECL					-5.2	24		CY100E422L-7C	◊ Aspen	60
8		CMOS					5	22		P4C422-8C	Performance	65
		GaAs E/D Mode					5	22		VS12G422TD-8	Vitesse	
9		CMOS					5	24		CY7C123-9C	◊ Cypress	70
10		CMOS					5	24		CY7C123-10M	◊† Cypress	
								22		P4C422-10C	Performance	75
		ECL					-4.5	24		F100422	◊ National	
							-5.2	24		F10422	◊ National	80
							-4.5	24		μPB100422-10 ◊ NEC	(3592)	
							-5.2	24		μPB10422-10	NEC (3592)	85
12		CMOS					5	24		CY7C123-12C	Cypress	90
								22		P4C422-12C	Performance	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256x4	12 nSF	CMOS					5	24		CY7C123-12M † Cypress		5
	15	CMOS					5	22		CY7C122-15C		
								24		◊* Cypress		
								22		CY7C123-15M † Cypress		
										S.25KX4-015 Micro-C		
	20	CMOS					5	22		P4C422-15C Performance		10
	25	CMOS					5	22		P4C422-15M † Performance		
										VT7C122 VLSI Tech		
										P4C422-20M † Performance		
										CY7C122-25C		
										CY7C122-25M		15
										◊*† Cypress		
								16		S256KX4-025 Micro-C		
								22		P4C422-25C Performance		
										P4C422-25M † Performance		
		NMOS					5	24		AM9122-25 AMD		20
	35	CMOS					5	22		CY7C122-35C		
										◊* Cypress		
										CY7C122-35M		
										◊*† Cypress		
										CY93422AC ◊* Cypress		25
										P4C422-35M † Performance		
										P93U422-35C Performance		
										P93U42235M ◊ Performance		
										AM91L22-35 AMD		
										AM9122-35 AMD		30
										AM9122-35M † AMD		
										93422AC ◊ National		
	40	TTL					5	22		AM93422 ◊ AMD		
	45	CMOS					5	22		CY93L422AC ◊ Cypress		
										CY93422AM *† Cypress		35
								16		CY93422C ◊ Cypress		
										93L422AC ◊ National		
										93422AM ◊† National		
										AM91L22-45 AMD		40
										AM91L22-45M † AMD		
										93422C ◊ National		
	55	CMOS					5	22		CY93L422AM		
										*† Cypress		45
										93L422AM ◊ National		
	60	CMOS					5	22		CY93L422C ◊ Cypress		
								16		CY93422M *† Cypress		
		CMOS/SOS					5	22		MA5101SOS GEC Plessey		50
		TTL					5	22		AM93L422 ◊ AMD		
										AM93422M *† AMD		
										93L422C ◊ National		
										93422M ◊† National		
	75	CMOS					5	22		CY93L422M *† Cypress		55
		TTL					5	22		AM93L422M *† AMD		
										93L422M ◊† National		
	150	CMOS					5	22		MWS5101 Harris		
										MWS5101A Harris		50
	220	CMOS					5	22		HM6551B-9 Harris		
								18		HM6551B/883 † Harris		
										HM6561B-9 Harris		
										HM6561B/883 † Harris		
										IM65X61-1 Intel		55
	250	CMOS					10	22		CDP1822 Harris		
							5	22		MWS5101EL2 Harris		
							10	22		TCC244 Harris		
	300	CMOS					5	22		HM6551-9 Harris		
										HM6551/883 † Harris		50
								18		HM6561-9 Harris		
										HM6561/883 † Harris		(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256x4	300	CMOS					5	22		LH5101-30	† Sharp	5
	350	CMOS					5	22		HM6551-5	Harris	
								18		HM6561-5	Harris	
								22		MWS5101DL3	† Harris	
										MWS5101EL3	Harris	
	400	CMOS					5	22		CDP1822C	† Harris	10
										HB1822C	† Hughes	
	450	CMOS					5	22		LH5101-45	Sharp	
	650	CMOS					5	22		LH5101-L3	Sharp	
	800	CMOS					5	22		LH5101	Sharp	
256x8	3000	CMOS					3	22		LH5101S	Sharp	15
								36		LH5101SM	Sharp	
	35	CMOS					5	24		PCF8570	Signetics	
	40	TTL					5	22		AV2102-35	† Avaseam	
										N8X350	Signetics	
	55	CMOS					5	24		S8X350	† Signetics	20
	70	CMOS					5	24		AV2102-55	† Avaseam	
	100	CMOS					5	8		AV2102-70	† Avaseam	
										CDP68HC68R2	Harris	
256x9	35	TTL					5	22		93479AC	National	25
										N82S212A	Signetics	
	45	TTL					5	22		93479AM	National	
										93479C	National	
										N82S212	Signetics	
	60	TTL					5	22		93479M	National	30
	70	TTL					5	22		S82S212	† Signetics	
256x16	5	ECL					-5.2	60		MB770H-5	Fujitsu	35
512x4	650	CMOS					5	22		LH5102-6	Sharp	
	800	CMOS					5	22		LH5102-8	Sharp	
	1200	CMOS					5	24		LH5102	Sharp	
								22		LH5102W	Sharp	
512x8	85	CMOS					5	32		BPS16288P	ROHM	40
512x9	15	ECL					-5.2	32		MB70801-15	Fujitsu	
	20	ECL					-5.2	24		MB70802-15	Fujitsu	
	25	CMOS					5	28		MK45H01-25	◊ SGS-Thomson	
	35	CMOS					5	28		MK45H01-35	◊ SGS-Thomson	
	50	CMOS					5	28		MK45H01-50	◊ SGS-Thomson	
	65	CMOS					5	28		MK45H01-65	◊ SGS-Thomson	45
	120	CMOS					5	28		MK45H01-12	◊ SGS-Thomson	
1Kx1	20	NMOS					5	16		2125H-1	Intel	
	25	NMOS					5	16		2125H-2	Intel	
	30	NMOS					5	16		2125H-3	Intel	
		TTL					5	16		AM93425AC	* AMD	
										93415AC	◊ National	
										93425AC	◊ National	50
	35	NMOS					5	16		2125H-4	Intel	
	40	TTL					5	16		AM93425AM	*† AMD	
	45	NMOS					5	16		2115A	Intel	
										2115AL	Intel	
										2125A	Intel	55
										2125AL	Intel	
		TTL					5	16		AM93425C	* AMD	
										93415C	◊ National	
										93425C	◊ National	
	50	TTL					5	16		93425AM	◊† National	60
	60	TTL					5	16		93L415	◊ National	
										93L415C	◊ National	
										93L425C	◊ National	
										93415M	◊† National	
										93425M	◊† National	65
	65	TTL					5	16		AM93425M	*† AMD	
	70	NMOS					5	16		2115A-2	Intel	
										2115AL-2	Intel	
										2125A-2	Intel	
										2125AL-2	Intel	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMS (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Kx1	70	TTL					5	16		93L415M 93L425M	◊ National ◊† National	(Cont'd)
	180	CMOS					5	16		HM6508B-9 HM6508B/883 †	Harris Harris	5
								18		HM6518B-9 HM6518B/883	◊ Harris ◊† Harris	10
	250	CMOS					5	16		HM6508-9 HM6508/883 †	Harris Harris	
								18		HM6518-9 HM6518/883	◊ Harris ◊† Harris	
	300	CMOS					5	16 18		HM6508-5 HM6518-5	Harris ◊ Harris	
1Kx4	3	Bipolar					-5.2	24		MBM10A474-3 MBM101474A-3	◊ Fujitsu ◊ Fujitsu	15
		ECL 10K					-5.2	24		μPB10474-3 SY10474-3	◊ NEC (3592) Synergy (3706)	20
		ECL 100K					-4.5	24		μPB100474-3 SY100474-3	◊ NEC Synergy (3706)	25
		ECL 101K					-5.2			SY101474-3	Synergy (3706)	30
		GaAs 10K/10KH ECL 100K ECL					-5.2, -3.4 -4.5 -5.2	40 24 24		12G044 CY10E474-4C CY100E474-35C	TriQuint ◊ Aspen ◊ Aspen	35
	4	ECL 10K 10K ECL 100K ECL					-5.2 -5.2 -4.5	24 24 24		μPB10474-4 CY10E474-4C CY100E474-3.5C	◊ NEC (3592) Cypress Cypress	40
	5	ECL					-4.5 -5.2	24 24		MBM100474A-5 MBM10474A-5	Fujitsu Fujitsu	45
		ECL 10K					-5.2			SY10474-5	Synergy (3706)	
		ECL 100K					-4.5			SY100474-5	Synergy (3706)	
		ECL 101K					-5.2			SY101474-5	Synergy (3706)	
		10K ECL					-5.2	24		CY10E474-5C CY10E474L-5M	Cypress † Cypress	
		10K/10KH ECL					-4.5	24		CY10E474-5C CY10E474L-5C	◊ Aspen ◊ Aspen	
		100K ECL					-5.2	24		CY100E474-5C CY100E474L-5C	◊ Aspen ◊ Aspen	
							-4.5	24		CY100E474-5C	Cypress	
		10K/KH ECL 100K ECL					-5.2 -4.5	24 24		CY10E474L-5C CY100E474L-5C	◊ Cypress ◊ Cypress	
	6	CMOS ECL					3.3 -4.5	24 24		P3C3148-6C μPB100474-6	◊ Performance ◊ NEC (3592)	
	7	CMOS ECL					3.3 -4.5 -5.2	24 24 24		P3C3148-7C MBM100474A-7 MBM10474A-7	◊ Performance Fujitsu Fujitsu	
		ECL 10K ECL 100K ECL 101K 10K ECL					-5.2 -4.5 -5.2 -5.2	 24		SY10474-7 SY100474-7 SY101474-7 CY10E474L-7C CY10E474L-7M	Synergy Synergy Synergy Cypress † Cypress	(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Date I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Kx4	7	10K/10KH ECL					-4.5	24		CY10E474L-7C	Aspen	(Cont'd)
		100K ECL					-5.2	24		CY100E474L-7C	Aspen	
							-4.5	24		CY100E474L-7C	Cypress	
	8	CMOS					3.3	24		P3C3148-8C	Performance	5
		ECL					5.2	24		MBM10474A-15	Fujitsu	
							-4.5	24		μPB100474-8	NEC (3592)	
							-5.2	24		μPB10474-8	NEC (3592)	
	9	ECL					-4.5	28		MBM100476LL-9	Fujitsu	10
							-5.2	28		MBM100476RR-9	Fujitsu	
										MBM10476LL-9	Fujitsu	
										MBM10476RR-9	Fujitsu	
	10	CMOS					5	18		P4C148-10C	Performance	15
								24		P4C149-10C	Performance	
								20		P4C150-10C	Performance	
										P4C151-10C	Performance	
		ECL					-4.5	24		MBM100474A-10	Fujitsu	20
							-5.2	24		MBM10474A-10	Fujitsu	
							-4.5	24		μPB100474-10	NEC (3592)	
							-5.2	24		μPB10474-10	NEC (3592)	
	12	CMOS					5	18		P4C148-12C	Performance	25
								24		P4C149-12C	Performance	
								20		P4C150-12C	Performance	
										P4C151-12C	Performance	
	15	CMOS					5	24		CY7C150-15C	Aspen	30
								18		P4C148-15C	Performance	
										P4C148-15M	Performance	
										P4C149-15C	Performance	
								24		P4C149-15M	Performance	
								24		P4C150-15C	Performance	35
										P4C150-15M	Performance	
								20		P4C151-15C	Performance	
										P4C151-15M	Performance	
								24		VT20C50-15	VLSI Tech	
		ECL					-4.5	24		MBM100474A-15	Fujitsu	40
							-5.2	24		MB10474A-15	Fujitsu	
							-4.5	24		μPB100474-15	NEC (3592)	
							-5.2	24		μPB10474-15	NEC (3592)	
	20	CMOS					5	18		P4C148-20C	Performance	45
										P4C148-20M	Performance	
										P4C149-20C	Performance	
										P4C149-20M	Performance	
								24		P4C150-20C	Performance	50
										P4C150-20M	Performance	
								20		P4C151-20C	Performance	
										P4C151-20M	Performance	
								24		VT20C50-20	VLSI Tech	
		NMOS					5	24		AM9150-20	AMD	
	25	CMOS					5	18		CY7C148-25C	Aspen	55
										CY7C149-25C	Aspen	
								24		CY7C150-25C	Aspen	
										CY7C150-25M	Aspen	
								18		P4C148-25C	Performance	
										P4C148-25M	Performance	
										P4C149-25C	Performance	
										P4C149-25M	Performance	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Kx4	25	CMOS					5	24		P4C150-25C ◊ Performance P4C150-25M ◊† Performance		5
								20		P4C151-25C Performance P4C151-25M † Performance		
								18		IMS1223-25 SGS-Thomson IMS1223-25M † SGS-Thomson		
								24		VT20C50-25 VLSI Tech		
			NMOS					24		AM9150-25 * AMD		
	35	CMOS					5	18		CY21L48-35C Cypress CY21L49-35C Cypress CY2148-35C Cypress CY2149-35C Cypress CY7C148-35C ◊ Cypress CY7C148-35M ◊† Cypress CY7C149-35C ◊* Cypress CY7C149-35M ◊† Cypress		10
								24		CY7C150-35C ◊* Cypress CY7C150-35M ◊† Cypress S1KX4-035 Micro-C		
								18		P4C148-35M † Performance P4C149-35M † Performance		
								24		P4C150-35M ◊† Performance P4C151-35M † Performance		
								20		IMS1223-35 SGS-Thomson IMS1223-35M † SGS-Thomson		
								18				
			NMOS					18		AM2148-35 ◊ AMD AM2149-35 ◊ AMD		
								24		AM9150-35 * AMD 2149H-1 Intel		
			NMOS, Refurbished					18		2148-35 Krueger 2149-35 Krueger 2149-35 ◊ Micro-C	(3548) (3548)	
45	CMOS						5	18		CY21L48-45C Cypress CY21L49-45C Cypress CY2148-45C Cypress CY2148-45M † Cypress CY2149-45C Cypress CY2149-45M † Cypress CY7C148-45C ◊* Cypress CY7C148-45M ◊† Cypress CY7C149-45C ◊* Cypress CY7C149-45M ◊† Cypress IMS1223-45M † SGS-Thomson		35
			NMOS					18		AM21L48-45 AMD AM21L49-45 AMD AM2148-45 ◊ AMD AM2149-45 ◊ AMD		
55	CMOS						5	24		AM9150-45 * AMD 2148H-2 Intel 2149H-2 Intel S1KX4-045 Micro-C		50
								18				
			NMOS, Refurbished					18		2148-45 Krueger 2149-45 Krueger	(3548) (3548)	
55	CMOS						5	18		CY21L48-55C Cypress CY21L49-55C Cypress		55
											(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Kx4	55	CMOS					5	18			(Cont'd)	
										CY2148-55C	Cypress	
										CY2148-55M †	Cypress	
										CY2149-55C	Cypress	
										CY2149-55M †	Cypress	
		NMOS					5	18		AM21L48-55	AMD	5
										AM21L49-55	AMD	
										AM2148-55	◊ AMD	
										AM2149-55	◊ AMD	
										2148H-3	Intel	10
										2148HL-3	Intel	
										2149H-3	Intel	
										S1KX4-055	Micro-C	
70		CMOS/SOS					5	18		MA5114SOS	GEC Plessey	
		NMOS					5	18		AM21L48-70	AMD	15
										AM21L49-70	AMD	
										AM2148-70	◊ AMD	
										AM2149-70	◊ AMD	
										M2148H	† Intel	
										2148H	◊ Intel	20
										2148HL	Intel	
										2149H	Intel	
										2149HL	Intel	
										S1KX4-070	Micro-C	
		NMOS, Refurbished					5	18		NMC2148H	National	
										2148-70	Krueger	25
										(3548)		
										2148-70	◊ Micro-C	
90		CMOS					5	18		VC6114-90	Micro-Comp	
										UM6114	UMC	
100		NMOS					5	18		2114AL-1	* Intel	
120		CMOS					5	18		HM6514S-9	◊ Harris	30
		NMOS					5	18		2114AL-2	* Intel	
150		CMOS					5	18		MWS5114	Harris	
										LH5114H-15	Sharp	
		TTL			20	1000	5	18		21C14-150	Krueger	35
		NMOS					5	18		M2114AL-3	*† Intel	
										2114AL-3	* Intel	
		NMOS, Refurbished					5	18		2114-150	Krueger	40
										(3548)		
200		CMOS					5	18		HM6514B-9	◊ Harris	
										HM6514B/883	◊ Harris	
										† Harris		
										MWS5114-3	† Harris	
		TTL			20	120	5	20		21C14-200	Krueger	45
		NMOS					5	18		AM9114E	* AMD	
										M2114A-4	*† Intel	
										M2114AL-4	*† Intel	
										2114AL-4	* Intel	
										S1KX4-200	Micro-C	
220		CMOS					5	18		HS6514RH	‡ Harris	
										HS6514RRH	‡ Harris	
250		CMOS					5	18		MWS5114-2	† Harris	
										SRM2114C-5	S-MOS (3693)	50
										UM6104	UMC	
		NMOS					5	18		M2114A-5	*† Intel	
300		CMOS					5	18		CMM5114/1RZ		
										‡ Harris		
										HM6514-5	◊ Harris	55
										HM6514-9	◊ Harris	
										HM6514C-9	◊ Harris	
										MWS5114-1	† Harris	
		NMOS					5	18		AM9114C	* AMD	
										AM9114C	* AMD	
450		CMOS					5	18		LH5114-4	Sharp	60
		TTL			20	120	5	20		21C14-450	Krueger	
		NMOS					5	18		AM9114B	* AMD	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Kx4	1000	CMOS					5	18		LH5114L	Sharp	
	2000	CMOS					5	18		UM6104-1	UMC	
1Kx5	24	CMOS					5	20		MK4505S-25	SGS-Thomson	5
	33	CMOS					5	20		MK4505S-33	SGS-Thomson	
	50	CMOS					5	20		MK4505S-50	SGS-Thomson	
1Kx8	45	CMOS					5	48		CY7C130-45M †	Cypress (3431)	
										CY7C130-55C	Cypress (3431)	
										CY7C130-55M	Cypress (3431)	
	90	CMOS 2-Port					5	48		MS6130L-90	Mosel	10
	100	2-Port					5	48		IDT7130LA-100	◊* IDT	
	120	CMOS					5	48		IDT7130LA-120	◊* IDT	
		NMOS					5	24		4801-1	Krueger (3548)	15
	150	NMOS					5	24		4801-2	Krueger (3548)	
	200	NMOS					5	24		4801-3	Krueger (3548)	
	250	NMOS					5	24		4801-4	Krueger (3548)	
	450	NMOS, Refurbished					5	18		2114-450	Krueger (3548)	
1Kx9	20	CMOS	TTL	Common	5	120	5	28		MT52C9010-20		20
	25	CMOS					5	28		883C ◊† MicronTech		
										MK45H02-25 ◊	SGS-Thomson	
	35	CMOS					5	28		MK45H02-35 ◊	SGS-Thomson	
	50	CMOS					5	28		VT7202-35 ◊	VLSI Tech	
										MK45H02-50 ◊	SGS-Thomson	
	65	CMOS					5	28		VT7202-50 ◊	VLSI Tech	25
	120	CMOS					5	28		MK45H02-65 ◊	SGS-Thomson	
1Kx16	10	ECL					-5.2	60		MK45H02-12 ◊	SGS-Thomson	
1048x4	200	NMOS, Refurbished					5	18		MB7750-10	Fujitsu	25
	1024x4	NMOS, Refurbished					5	18		2114-200	Krueger (3548)	
										2149-70	Krueger (3548)	
2Kx2	5	GaAs					-2	28		VS12G478FC-5		
	7	GaAs					-2	28		VS12G478FC-7	◊‡ Vitesse	
2Kx8	10	CMOS					5	24		VS12G478FC-5	◊‡ Vitesse	30
										ATT7C116-10 ◊	AT&T (3395)	
			TTL	Common	50	150	5	24		MT5C1608-10	MicronTech	35
	12	CMOS					5	24		ATT7C116-12 ◊	AT&T (3395)	
										UM6116A-12 ◊	UMC	
										VT20C19-12 ◊	VLSI Tech	40
			TTL	Common	50	140	5	24		MT5C1608-12	MicronTech	
	15	CMOS					5	24		ATT7C116-15 ◊	AT&T (3395)	45
										CY7C128A-15C	◊* Cypress	
										IDT6116LA-15	◊‡ IDT	40
										IDT6116SA-15	◊‡ IDT	
										IS61C16-15	ISSI	45
										IS61C16L-15	ISSI	
										L6116C-15	◊ LogicDev	
										P4C116-15C	Performance	
										VT20C18-15 ◊	VLSI Tech	
										VT20C19-15 ◊	VLSI Tech	
			TTL	Common	45	125	5	24		MT5C1608-15	MicronTech	
	20	CMOS					5	24		ATT7C116-20 ◊	AT&T (3395)	
										CY6116A-20C	Cypress	
										CY7C128A-20C	◊* Cypress	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
2KX8	20	CMOS					5	24			(Cont'd)	
										CY7C128A-20M ◊† Cypress IDT6116LA-20 ◊‡ IDT IDT6116SA-20 ◊‡ IDT L6116C-20 ◊ LogicDev L6116M-20 † LogicDev P4C116-20C Performance P4C116-20M † Performance VT20C18 VLSI Tech VT20C18-20 ◊ VLSI Tech VT20C19 VLSI Tech VT20C19-20 VLSI Tech		5 10
		TTL	Common		40	110	5	24		MT5C1608-20	MicronTech	
25		BiCMOS CMOS					5 5	24 24		TMS6716-25 TI CY6116A-25C Cypress CY6116A-25M † Cypress CY6117A-25M † Cypress CY7C128A-25C ◊ Cypress CY7C128A-25M ◊† Cypress IDT6116LA-25 ◊‡ IDT IDT6116LA-25B ◊‡ IDT IDT6116SA-25 ◊‡ IDT IDT6116SA-25B ◊‡ IDT IS61C16-25 ISSI IS61C16L-25 ISSI L6116C-25 ◊ LogicDev L6116M-25 † LogicDev P4C116-25C Performance P4C116-25M † Performance UM6116-25 UMC VT20C18-25 VLSI Tech VT20C19-25 VLSI Tech		15 20 25 30
		TTL	Common		30	100	5	24		MT5C1608-25	MicronTech	
30		CMOS					5	24		IDT6116LA-30 ◊ IDT IDT6116LA-30B ◊‡ IDT IDT6116SA-30 ◊ IDT IDT6116SA-30B ◊‡ IDT P4C116-30C Performance P4C116-30M † Performance		35
		TTL	Common		30	100	5	24		MT5C1608-30	MicronTech	
35		CMOS					5	24		CY6116-35C ◊ Cypress CY6116-35M † Cypress CY6116A-35C Cypress CY6116A-35M † Cypress CY6117A-35M † Cypress CY7C128A-35C ◊ Cypress CY7C128A-35M ◊† Cypress IDT6116LA-35 ◊ IDT IDT6116LA-35B ◊† IDT IDT6116SA-35 ◊ IDT IDT6116SA-35B ◊† IDT		40 45 50
								52		IDT71321LA-35 ◊‡ IDT IDT71321SA-35 ◊‡ IDT		

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
2Kx8	35	CMOS					5	24		IS61C16-35	ISSI	5
										L6116C-35	LogicDev	
										L6116M-35	LogicDev	
										P4C116-35C	Performance	
										P4C116-35M	Performance	
										UM6116-35	UMC	10
										V61C16-35	Vitellic (3747)	
										VT20C18-35	VLSI Tech	
										VT20C19-35	VLSI Tech	15
		TTL	Common		30	100	5	24		MT5C1608-35	MicronTech	
		NMOS					5	24		MCM2018AN35	Motorola	
		2-Port					5	48		IDT7142LA-35	IDT	20
35 nsf		CMOS					5	24		IS61C16L-35	ISSI	
45		CMOS					5	24		AV2116-45	Avasem	
										CY6116-45C	Cypress	
										CY6116-45M	Cypress	
										CY6116A-45C	Cypress	25
										CY6116A-45M	Cypress	
										CY6117A-45M	Cypress	
										CY7C128A-45C	Cypress	
										CY7C128A-45M	Cypress	
										IDT6116LA-45	IDT	30
										IDT6116LA-45B	IDT	
										IDT6116SA-45	IDT	
										IDT6116SA-45B	IDT	
										IDT71321LA-45	IDT	
										IDT71321SA-45	IDT	35
										IDT71322L-45	IDT	
										IDT71322S-45	IDT	
										IDT71421SA-45B	IDT	
										L6116C-45	LogicDev	
										L6116M-45	LogicDev	40
										P4C116-45M	Performance	
										BR6116-45	ROHM	
										UM6116-45	UMC	
										V61C16-45	Vitellic	
										V61C16-45L	Vitellic	45
		NMOS					5	24		MCM2018AN45	Motorola	
		2-Port					5	52		IDT71321SA-45B	IDT	
										IDT7142LA-45	IDT	
										AV2116-55	Avasem	
										CY6116-55C	Cypress	50
										CY6116-55M	Cypress	
										CY6116A-55C	Cypress	
										CY6116A-55M	Cypress	
										CY6117A-55M	Cypress	
										CY7C128A-55C	Cypress	55
										CY7C128A-55M	Cypress	
										HM65162S-9	Harris	
										IDT6116LA-55B	IDT	
										IDT6116SA-55B	IDT	

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
2Kx8	55	CMOS					5	52		IDT71321LA-55 ‡ IDT IDT71321SA-55 ‡ IDT	(Cont'd)	
								24		LH5115-55 Sharp V61C16-55 † Vitelic V61C16-55L † Vitelic (3747)	5	
		CMOS, 2-port					5	48		CY7C142-55C † Cypress (3431) CY7C142-55M † Cypress (3431)		
		NMOS 2-Port					5	24		MCM2018AN55 Motorola		
							5	48		IDT7132SA-55 ‡ IDT		
								52		IDT71321SA-55B ‡ IDT	10	
								48		IDT7142LA-55 ‡ IDT		
60		CMOS TTL					5	24		HC6116 ‡ Honeywell HC6216 ‡ Honeywell		
70		CMOS					5	24		AV2116-70 † Avasem HM65162B-9 † Harris HM65162B/883 ‡ Harris IDT6116LA-70B ‡ IDT IDT6116SA-70B ‡ IDT LH5115-70 Sharp STC6116M-70 † STC UM6116A-70 † UMC V61C16-70 † Vitelic (3747)	15	
								20		V61C16-70L Vitelic (3747)		
			C	0.05	50	5	5	28		HY6116CLL-70 Hyundai	25	
				0.1	50	5	5	28		HY6116CL-70 Hyundai		
				1	50	5	5	28		HY6116C-70 Hyundai (3531)		
		NMOS					5	24		AM9128-70 † AMD S2KX8-070 Micro-C		
		2-Port					5	48		IDT7132SA-70 ‡ IDT IDT7142LA-70 ‡ IDT	30	
80		CMOS					5	24		HS65C162RH ‡ Harris HS65C162RRH ‡ Harris		
85		CMOS					5	24		S2517 Seiko Instr L6116C-85 † LogicDev L6116M-85 † LogicDev	35	
			C	0.05	50	5	5	28		HY6116CLL-85 Hyundai		
				1	50	5	5	28		HY6116C-85 Hyundai (3531)		
90		CMOS					5	24		HM65162-9 † Harris HM65162/883 ‡ Harris HM65162C-9 † Harris HM65172/883 † Harris IDT6116LA-90B ‡ IDT IDT6116SA-90B ‡ IDT VC6116-3L Micro-Comp	40	
										MS6516L-90C Mosel MS6516S-90C Mosel BR6116 ROHM STC6116M-90 † STC UM6116-3 † UMC	45	
		2-Port					5	48		IDT7132SA-90 ‡ IDT IDT7142LA-90 ‡ IDT	50	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
2Kx8	150	CMOS, Refurbished					5	24		6116-150	Krueger (3548)	5
										6116LP-150	Krueger	
		NMOS					5	24		AM9128-15M	*† AMD	
	200	NMOS, Refurbished					5	24		ETL2128-3	SGS-Thomson	10
										2128-150	Krueger (3548)	
										CDM6116A-2	Harris	
										HM6516-5	◊ Harris	
										HM6516-9	◊ Harris	
										HM6516/883	◊† Harris	
										HM6116-4	◊* Hitachi	
							28			48C02-20	◊ Krueger (3548)	
										MK48C02-20	◊ SGS-Thomson	
							24			MK48T02B-20	SGS-Thomson	
										MK48T12B-20	SGS-Thomson	
										MK48Z02-20	SGS-Thomson	
										MK6116-20	* SGS-Thomson	
										MK6116L-20	* SGS-Thomson	
		CMOS, Refurbished					5	24		6116-200	Krueger (3548)	20
	250									6116LP-200	Krueger	
		NMOS					5	24		AM9128-20	* AMD	
										AM9128-20M	*† AMD	
										ETL2128-4	SGS-Thomson	
		NMOS, Refurbished					5	24		2128-200	Krueger (3548)	25
	250						3	24		DS2016	Dallas	
							5	24		CDM6116A-9	Harris	
								28		48C02-25	◊ Krueger (3548)	
										MK48C02-25	◊ SGS-Thomson	
								24		MK48T02B-25	SGS-Thomson	
	1000									MK48T12B-25	SGS-Thomson	30
										MK48Z02-25	SGS-Thomson	
		NMOS					5	24		ETL2128-5	SGS-Thomson	
	1000	CMOS					5	24		UM6116-V	◊ UMC	
2Kx9	20	CMOS	TTL	Common	5	120	5	28		MT52C9020-20	883C	35
	25	CMOS					5	28		883C	◊† MicronTech	
	30	CMOS	TTL	Common	5	120	5	28		MK45H03-25	◊ SGS-Thomson	
	35									MT52C9020-30	883C	
										883C	◊† MicronTech	
										MK45H03-35	◊ SGS-Thomson	
	50	CMOS					5	28		VT7203-35	◊ VLSI Tech	
2Kx16	40									MK45H03-50	◊ SGS-Thomson	40
										VT7203-50	◊ VLSI Tech	
										MK45H03-65	◊ SGS-Thomson	
	45	CMOS					5	44		MK45H03-12	◊ SGS-Thomson	
	55	CMOS					5	68				
	44									MAP168-45	Waferscale (3750)	45
										MAP168-45	Waferscale (3750)	
										IDT7133L-55	◊*‡ IDT	
										IDT7133S-55	◊*‡ IDT	
										IDT7143L-55	◊*‡ IDT	
	44									IDT7143S-55	◊*‡ IDT	
										◊*‡ IDT		
										MAP168-55	Waferscale (3750)	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
2Kx16	70	CMOS					5	68		IDT7133L-70 IDT7133S-70 IDT7143L-70 IDT7143S-70	o* ‡ IDT o* ‡ IDT o* ‡ IDT o* ‡ IDT	(Cont'd)
2Kx32	85	CMOS					5	132		μPD43608	NEC	5
2560	500	CMOS	TTL	Serial	0.00025	50	5	14		S2510	o Seiko Instr	
4Kx1	5	10K ECL					-5.2	18		CY10E470-5C	Cypress	
		100K ECL					-4.5	18		CY100E470-5C	Cypress	
	6	CMOS					3.3	20		P3C3147-6C	o Performance	10
	7	CMOS					3.3	20		P3C3147-7C	o Performance	
		10K ECL					-5.2	18		CY10E470-7C	Cypress	
		100K ECL					-4.5	18		CY100E470-7C	Cypress	
	8	CMOS					3.3	20		P3C3147-8C	o Performance	15
	10	CMOS					5	18		P4C147-10C	Performance	
		ECL					-5.2	18		MBM100470A-10	Fujitsu	
							-4.5	18		MBM10470A-10	Fujitsu	
							-5.2	18		μPB100470-10	NEC (3592)	
										μPB10470-10	NEC (3592)	
	12	CMOS					5	18		P4C147-12C	Performance	20
	15	CMOS					5	18		P4C147-15C	Performance	
										P4C147-15M †	Performance	
		ECL					-4.5	18		MBM100470A-15	Fujitsu	
							-5.2	18		MBM10470A-15	Fujitsu	
							-4.5	18		μPB100470-15	NEC (3592)	
							-5.2	18		μPB10470-15	NEC (3592)	
	20	CMOS					5	18		P4C147-20C	Performance	25
										P4C147-20M †	Performance	
		ECL					-5.2	18		MBM10470A-20	Fujitsu	
25	CMOS						5	18		CY7C147-25C	o* Cypress	30
										P4C147-25C	Performance	
										P4C147-25M †	Performance	
										IMS1203-25	SGS-Thomson	
										IMS1203-25M †	SGS-Thomson	
35	CMOS						5	18		CY2147-35C	Cypress	35
										CY7C147-35C	o* Cypress	
										CY7C147-35M	o* † Cypress	
										P4C147-35M †	Performance	
										IMS1203-35	SGS-Thomson	
										IMS1203-35M †	SGS-Thomson	
		NMOS					5	18		AM2147-35	o AMD	40
										2147H-1	Intel	
										ET2147H-1	SGS-Thomson	
		NMOS, Refurbished					5	18		2147-35	Krueger (3548)	
										2147-35	o Micro-C	
45	CMOS						5	18		CY2147-45C	Cypress	45
										CY2147-45M †	Cypress	
										CY7C147-45C	o* Cypress	
										CY7C147-45M	o* † Cypress	
										IMS1203-45M †	SGS-Thomson	
		NMOS					5	18		AM21L47-45	AMD	50
										AM2147-45	o AMD	
										M2147H-2	† Intel	
										2147H-2	Intel	
										ET2147H-2	SGS-Thomson	
		NMOS, Refurbished					5	18		2147-45	Krueger (3548)	55

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx1	55	CMOS					5	18		CY2147-55C CY2147-55M †	Cypress Cypress	5
		NMOS					5	18		AM21147-55 AM2147-55 M2147H-3 2147H-3 2147HL-3 2147-3	AMD AMD Intel Intel Intel Micro-C	
										NMC2147H-4 ETL2147H-3 ET2147H-3	National SGS-Thomson SGS-Thomson	
		NMOS, Refurbished					5	18		2147-55	Krueger (3548)	
	70	CMOS					5	18		HM6147H MA5104SOS AM21147-70 AM2147-70 2147 M2147H 2147H 2147HL ETL2147	Hitachi GEC Plessey AMD AMD Harris Intel Intel Intel SGS-Thomson	15
		CMOS/SOS					5	18				
		NMOS					5	18				
		NMOS, Refurbished					5	18		2147-70	Krueger (3548)	
	120	CMOS					5	18		HM6504S-9 HM6504S/883	◊ Harris ◊† Harris	25
	180	CMOS					5	18		HS6504RH HS6504RRH	‡ Harris ‡ Harris	
	200	CMOS					5	18		HM6504B-9 HM6504B/883	◊ Harris ◊† Harris	
	300	CMOS					5	18		CMM5104/1RZ HM6504-5 HM6504-9 HM6504/883 HM6504C-9	‡ Harris ◊ Harris ◊ Harris ◊† Harris ◊ Harris	
		NMOS					5	18		AM90L44C AM9044CM	AMD † AMD	
	450	CMOS					5	18		LH5104-4	Sharp	40
4Kx4	5	Bipolar					-5.2	28		MBM10A484-5 MBM101A484-5	◊ Fujitsu ◊ Fujitsu	
		ECL 10K					-5.2	28		μPB10A484-5 μPB10484A-5 SY10484-5	◊ NEC (3592) ◊ NEC (3592) Synergy (3706)	
		ECL 100K					-4.5	28		μPB100A484-5 μPB100484A-5 SY100484-5	◊ NEC (3592) ◊ NEC (3592) Synergy (3706)	
		ECL 101K					-5.2	28		SY101484-5	Synergy (3706)	
	7	ECL 10K					-5.2	28		μPB10A484-7 μPB10484A-7	◊ NEC (3592) ◊ NEC (3592)	
		ECL 10K/10KH					-5.2	28		CY10E484-7C CY100E484-7C CY101E484-7C	◊ Aspen (0006) ◊ Aspen (0006)	
		ECL 100K					-4.5	28		μPB100A484-7 μPB100484A-7	◊ NEC (3592) ◊ NEC (3592)	
							-5.2	28				
							-4.5	28				
	10K ECL 100K ECL						-5.2	28		CY10E484L-7 CY100E484L-7 CY101E484L-7	Cypress Cypress Cypress	55
							-4.5	28				
							-5.2	28				

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—General Purpose										(Cont'd)			
4Kx4	8	ECL 10K					-5.2			SY10484-8	Synergy (3706)		
		ECL 100K					-4.5			SY100484-8	Synergy (3706)		
		ECL 101K					-5.2			SY101484-8	Synergy (3706)		
	10	CMOS					5	24		ATT7C168-10 ♦ AT&T ATT7C170-10 ♦ AT&T ATT7C171-10 ♦ AT&T ATT7C172-10 ♦ AT&T QS8761-10 ♦ Quality Semi QS8762-10 ♦ Quality Semi		5	
								20 nsF		QS8768-10 ♦ Quality Semi (3613)		10	
		TTL	Common	50	150	5	20	22		MT5C1604-10 MicronTech MT5C1605-10 MicronTech			
								24		MT5C1606-10 MicronTech MT5C1607-10 MicronTech			
		ECL						-4.5	28		MBM100484A-10 ♦ Fujitsu MBM10484A-10 ♦ Fujitsu		15
								-5.2	28		μPB100484-10 NEC (3592) μPB10484-10 NEC (3592)		
								-4.5	28				
								-5.2	28				
		ECL 10K						-5.2			SY10484-10 Synergy (3706)		20
								-5.2	28		CY10E484-10C ♦ Aspen (0006) CY100E484-10C ♦ Aspen (0006)		
								-5.2	28		CY101E484-10C ♦ Aspen		
		ECL 10K/10KH ECL 100K						-4.5			SY100484-10 Synergy (3706)		25
								-5.2					
								-5.2					
		ECL 101K						-5.2			SY101484-10 Synergy (3706)		30
								-5.2	28		CY10E484L-10 Cypress CY100E484L-10 Cypress		
								-5.2	28		CY101E484L-10 Cypress (3435)		
	12	CMOS					5	24		ATT7C168-12 ♦ AT&T ATT7C170-12 ♦ AT&T ATT7C171-12 ♦ AT&T ATT7C172-12 ♦ AT&T		35	
								20		IDT6168LA-12 ♦ IDT IDT6168SA-12 ♦ IDT			
								22		IDT6187S-12 ♦ IDT IDT61970L-12 ♦ IDT IDT61970S-12 ♦ IDT			
								24		P4C1681-12C Performance P4C1682-12C Performance			
								22		P4C170-12C Performance			
								24		QS8761-12 ♦ Quality Semi QS8762-12 ♦ Quality Semi			
								20 nsF		QS8768-12 ♦ Quality Semi (3613)			
								20		VT20C69-12 ♦ VLSI Tech VT20C79-12 ♦ VLSI Tech			
		TTL	Common	45	140	5	20	22		MT5C1604-12 MicronTech MT5C1605-12 MicronTech		45	
								24		MT5C1606-12 MicronTech MT5C1607-12 MicronTech			
								Seperate	45	140	5		24
13	ECL						-4.5	28		MBM100486LL-13 Fujitsu MBM100486RR-13 Fujitsu		50	
							-5.2	28		MBM10486LL-13 Fujitsu MBM10486RR-13 Fujitsu			

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	15	CMOS				5	24			ATT7C168-15 ♦ AT&T ATT7C170-15 ♦ AT&T ATT7C171-15 ♦ AT&T	(Cont'd)	
							20			CYC168A-15C ♦ Cypress CY7C168A-15C ♦ Cypress CY7C169A-15C ♦ Cypress		5
							22			CY7C170A-15C ♦ Cypress		
							24			CY7C171A-15C ♦ Cypress CY7C172A-15C ♦ Cypress		
							20			IDT6168LA-15 ♦ IDT IDT6168SA-15 ♦ IDT		10
							22			IDT6178S-15 ♦ IDT IDT6178S-15B ♦ IDT IDT61970L-15 ♦ IDT IDT61970L-15B ♦ IDT IDT61970S-15 ♦ IDT IDT61970S-15B ♦ IDT		15
							20			L7C168C-15 ♦ LogicDev L7C170C-15 ♦ LogicDev L7C171C-15 ♦ LogicDev L7C172C-15 ♦ LogicDev		20
							20			P4C168-15C Performance P4C168-20C Performance		
							24			P4C1681-15C Performance P4C1682-15C Performance		25
							20			P4C169-15C Performance		
							22			P4C170-15C Performance		
							24			QS8761-15 ♦ Quality Semi QS8762-15 ♦ Quality Semi		
							20 nsF			QS8768-15 ♦ Quality Semi (3613) QS8769-15 ♦ Quality Semi (3613)		30
							20			VT20C68-15 ♦ VLSI Tech VT20C69-15 ♦ VLSI Tech		
							24			VT20C72-15 ♦ VLSI Tech VT20C78-15 ♦ VLSI Tech VT20C79-15 ♦ VLSI Tech		35
				TTL	Common	40	120	5	20	MT5C1604-15 MicronTech MT5C1605-15 MicronTech		
								22				
				Seperate	40	120	5	24		MT5C1607-15 MicronTech NT5C1606-15 MicronTech		40
				ECL			-4.5	28		MBM100484-15 ♦ Fujitsu MBM10484-15 ♦ Fujitsu μPB100484-15 NEC (3592) μPB10484-15 NEC (3592)		
							-5.2	28				
							-4.5	28				
							-5.2	28				
	20	CMOS					5	22		MK41S80-20 ♦ SGS-Thomson ATT7C168-20 ♦ AT&T ATT7C170-20 ♦ AT&T ATT7C171-20 ♦ AT&T ATT7C172-15 ♦ AT&T ATT7C172-20 ♦ AT&T		45
							5	24				
								20		CY7C168A-20C ♦ Cypress CY7C168A-20M ♦ Cypress ♦† Cypress	(Continued)	50

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	20	CMOS					5	20		CY7C169A-20C ◊* Cypress CY7C169A-20M ◊*† Cypress	(Cont'd)	
								22		CY7C170A-20C ◊* Cypress CY7C170A-20M ◊*† Cypress		
								24		CY7C171A-20C ◊ Cypress CY7C171A-20M ◊† Cypress CY7C172A-20C ◊ Cypress CY7C172A-20M ◊† Cypress		5
								20		IDT6168LA-20 ◊ IDT IDT6168LA-20B ◊‡ IDT IDT6168SA-20 ◊ IDT IDT6168SA-20B ◊‡ IDT		10
								22		IDT6178S-20 ◊* IDT IDT6178S-20B ◊*† IDT IDT61970L-20 ◊ IDT IDT61970L-20B ◊† IDT IDT61970S-20 ◊ IDT IDT61970S-20B ◊† IDT		15
								24		IDT71681LA-20 ◊ IDT IDT71681SA-20 ◊‡ IDT IDT71682LA-20 ◊*‡ IDT IDT71682SA-20 ◊*‡ IDT		20
								20		IS61C68L-20 ISSI IS61C68S-20 ISSI		
								22		IS61C70L-20 ISSI IS61C70S-20 ISSI		25
								20		L7C168C-20 ◊ LogicDev L7C168M-20 ◊† LogicDev		
								22		L7C170C-20 ◊ LogicDev L7C170M-20 ◊† LogicDev		30
								24		L7C171C-20 ◊ LogicDev L7C171M-20 ◊† LogicDev L7C172C-20 ◊ LogicDev L7C172M-20 ◊† LogicDev MT5C1607-20 MicronTech MCM6268-20 * Motorola		35
								20		MCM6269-20 * Motorola		
								24		MCM6270-20 * Motorola		
								20		P4C168-20M † Performance		40
								24		P4C1681-20C Performance P4C1681-20M † Performance P4C1682-20C Performance P4C1682-20M † Performance		
								20		P4C169-20C Performance P4C169-20M † Performance		45
								22		P4C170-20C Performance P4C170-20M † Performance		
								24		QS8761-20 ◊ Quality Semi QS8762-20 ◊ Quality Semi	(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	20	CMOS					5	20 nsF			(Cont'd)	
										QS8768-20	◊ Quality Semi (3613)	
										QS8769-20	◊ Quality Semi (3613)	
									20	MK41H68-20 †	SGS-Thomson	
									22	MK41H69-20 †	SGS-Thomson	5
									20	MK41H80-20	SGS-Thomson	
										VT20C68	VLSI Tech	
										VT20C68-20	VLSI Tech	
										VT20C69	VLSI Tech	
										VT20C69-20	VLSI Tech	
									24	VT20C72-20	◊ VLSI Tech	10
									22	VT20C78	VLSI Tech	
										VT20C78-20	VLSI Tech	
										VT20C79	VLSI Tech	
										VT20C79-20	VLSI Tech	
												15
										MT5C1604-20	MicronTech	
										MT5C1605-20	MicronTech	
												20
										S4KX4-022	Micro-C	
										MCM4180-22 *	Motorola	
										MCM62351-22 *	Motorola	
												25
										MK41S80-25	◊ SGS-Thomson	
										CY7C168-25C *	Cypress	
										CY7C168A-25C	◊ Cypress	
										CY7C168A-25M	◊† Cypress	
										CY7C169-25C *	Cypress	
										CY7C169A-25C	◊ Cypress	
										CY7C169A-25M	◊† Cypress	
												30
										CY7C170-25C *	Cypress	
										CY7C170A-25C	◊ Cypress	
										CY7C170A-25M	◊† Cypress	
												35
										CY7C171-25C	Cypress	
										CY7C171A-25C	◊ Cypress	
										CY7C171A-25M	◊† Cypress	
										CY7C172-25C	Cypress	
										CY7C172A-25C	◊ Cypress	
										CY7C172A-25M	◊† Cypress	
												40
										HM6268-25	Hitachi	
										IDT6168LA-25	◊ IDT	
										IDT6168LA-25B	◊† IDT	
										IDT6168SA-25	◊ IDT	
										IDT6168SA-25B	◊† IDT	
												45
										IDT61970L-25	◊ IDT	
										IDT61970L-25B	◊† IDT	
										IDT61970S-25	◊ IDT	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY--RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static--General Purpose										(Cont'd)		
4Kx4	25	CMOS					5	24		IDT71682LA-25B ‡ IDT IDT71682SA-25 ‡ IDT IDT71682SA-25B ‡ IDT	(Cont'd)	
								20		IS61C68L-25 IS61C68S-25	ISSI	5
								22		IS61C70L-25 IS61C70S-25	ISSI	
								20		L7C168C-25 † L7C168M-25 †	LogicDev	
								22		L7C170C-25 † L7C170M-25 †	LogicDev	10
								24		L7C171C-25 † L7C171M-25 † L7C172C-25 † L7C172M-25 †	LogicDev	15
								20		S4KX4-025	Micro-C	
								24		MT5C1607-25	MicronTech	
								22		MCM4180-25 *	Motorola	
								24		MCM62351-25 ‡ Motorola	Motorola	
								20		MCM6268-25 † MCM6269-25 † P4C168-25C P4C168-25M †	Motorola Motorola Performance Performance	20
								24		P4C1681-25C P4C1681-25M † P4C1682-25C P4C1682-25M †	Performance Performance Performance Performance	25
								20		P4C169-25C P4C169-25M †	Performance Performance	
								22		P4C170-25C P4C170-25M †	Performance Performance	30
								20		IMS1423-25 MK41H68-25 † MK41H69-25 †	SGS-Thomson SGS-Thomson SGS-Thomson	
								22		MK41H78-25 MK41H79-25 MK41H80-25	SGS-Thomson SGS-Thomson SGS-Thomson	35
								20		VT20C68-25 VT20C69-25	VLSI Tech VLSI Tech	
								24		VT20C72-25 VT20C78-25 VT20C79-25	VLSI Tech VLSI Tech VLSI Tech	40
								22		MT5C1604-25 MT5C1605-25	MicronTech MicronTech	
								20		MT5C1606-25	MicronTech	45
								20		MB81C68A †	Fujitsu	
								20		MB81C69A-30 MT5C1607-30 MCM62351-30 †	Fujitsu MicronTech Motorola	
								20		P4C168-30C P4C168-30M †	Performance Performance	50
								24		P4C1681-30C P4C1681-30M † P4C1682-30C P4C1682-30M †	Performance Performance Performance Performance	55
								20		P4C169-30C P4C169-30M †	Performance Performance	
								22		P4C170-30C P4C170-30M †	Performance Performance	
								20		MT5C1604-30 MT5C1605-30	MicronTech MicronTech	60
								22			(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	30	CMOS	TTL	Seperate	30	100	5	24		MT5C1606-30	MicronTech	
	35	CMOS								CY7C168-35C * Cypress CY7C168-35M † Cypress CY7C168A-35C ◊* Cypress CY7C168A-35M ◊*† Cypress CY7C169-35C * Cypress CY7C169-35M *† Cypress CY7C169A-35C ◊* Cypress CY7C169A-35M ◊*† Cypress		5
								22		CY7C170-35C * Cypress CY7C170-35M *† Cypress CY7C170A-35C ◊* Cypress CY7C170A-35M ◊*† Cypress		10
								24		CY7C171-35C Cypress CY7C171-35M † Cypress CY7C171A-35C ◊ Cypress CY7C171A-35M ◊† Cypress CY7C172-35C Cypress CY7C172-35M † Cypress CY7C172A-35C ◊ Cypress CY7C172A-35M ◊† Cypress		15
								20		HM6268-35 Hitachi IDT6168LA-35 ◊ IDT IDT6168LA-35B ◊† IDT IDT6168SA-35 ◊ IDT IDT6168SA-35B ◊† IDT		25
								22		IDT61970L-35 ◊ IDT IDT61970L-35B ◊† IDT IDT61970S-35 ◊ IDT IDT61970S-35B ◊† IDT		30
								24		IDT71681LA-35 ◊ IDT IDT71681LA-35B ◊† IDT IDT71681SA-35 ◊ IDT IDT71681SA-35B ◊† IDT IDT71682LA-35 ◊* IDT IDT71682LA-35B ◊*† IDT IDT71682SA-35 ◊* IDT IDT71682SA-35B ◊*† IDT		35
								20		L7C168C-35 ◊ LogicDev L7C168M-35 ◊† LogicDev		40
								22		L7C170C-35 ◊ LogicDev L7C170M-35 ◊† LogicDev		
								24		L7C171C-35 ◊ LogicDev L7C171M-35 ◊† LogicDev L7C172C-35 ◊ LogicDev L7C172M-35 ◊† LogicDev		45
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	35	CMOS					5	22				
												(Cont'd)
TTL	Common	30	100	5	20	22						
Seperate	30	100	5	24								
NMOS	TTL	30	120	5	20							
40	CMOS											
45	CMOS											
22												
24												
424												
24												

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ° Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	45	CMOS					5	20		IDT6168LA-45B ‡ IDT	(Cont'd)	
								22		IDT6168SA-45B ‡ IDT		5
								24		IDT61970L-45 † IDT IDT61970L-45B ‡ IDT IDT61970S-45 † IDT IDT61970S-45B ‡ IDT		10
								20		IDT71681LA-45 ‡ IDT IDT71681LA-45B ‡ IDT IDT71681SA-45 ‡ IDT IDT71681SA-45B ‡ IDT IDT71682LA-45 ‡ IDT IDT71682LA-45B ‡ IDT IDT71682SA-45 ‡ IDT IDT71682SA-45B ‡ IDT		15
								22		6168H-45 Krueger L7C168C-45 † LogicDev L7C168M-45 ‡ LogicDev	(3548)	20
								24		L7C170C-45 † LogicDev L7C170M-45 ‡ LogicDev		25
								20		L7C171C-45 † LogicDev L7C171M-45 ‡ LogicDev L7C172C-45 † LogicDev L7C172M-45 ‡ LogicDev		30
								24		S4KX4-045 Micro-C MCM1423-45 Motorola P4C168-45M † Performance		35
								20		P4C1681-45M † Performance P4C1682-45M † Performance		
								22		P4C169-45M † Performance P4C170-45M † Performance		
								20		IMS1423-45 SGS-Thomson IMS1423-45M † SGS-Thomson		
								20		UM6168-45 UMC V61C68-45 Vitelec V61C68-45L Vitelec		
		NMOS					5	20		AM2168-45 † AMD 2168-45 ‡ Krueger		
		TTL			30	120	5	20				
55		CMOS					5	20		IDT6168LA-55B ‡ IDT		
								22		IDT6168SA-55B ‡ IDT		40
								24		IDT61970L-55B ‡ IDT IDT61970S-55B ‡ IDT		
								20		IDT71681LA-55B ‡ IDT IDT71681SA-55B ‡ IDT IDT71682LA-55B ‡ IDT IDT71682SA-55B ‡ IDT		45
								20		6168H-55 Krueger S4KX4-055 Micro-C	(3548)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx4	55	CMOS					5	20		IMS1423-55M † SGS-Thomson V61C68-55 Vitelic V61C68-55L Vitelic		
		NMOS					5	20		AM2168-55 * AMD		
70	CMOS						5	20		IDT6168LA-70B † IDT IDT6168SA-70B † IDT		5
								24		IDT71681LA-70B † IDT IDT71681SA-70B † IDT IDT71682LA-70B † IDT IDT71682SA-70B † IDT		10
								20		S4KX4-070 Micro-C V61C68-70 Vitelic		
										AM2168-70 * AMD 2168-70 † Krueger		
										IDT6168LA-85B † IDT IDT6168SA-85B † IDT		15
								24		IDT71681LA-85B † IDT IDT71681SA-85B † IDT IDT71682LA-85B † IDT IDT71682SA-85B † IDT		20
								20		L7C168C-85 † LogicDev L7C168M-85 † LogicDev		
								22		L7C170C-85 † LogicDev L7C170M-85 † LogicDev		
								24		L7C171C-85 † LogicDev L7C171M-85 † LogicDev L7C172C-85 † LogicDev L7C172M-85 † LogicDev		25
										NMOS 5 20	MBM8168-85W † Fujitsu	
100	CMOS						5	20		IDT6168LA-100B † IDT IDT6168SA-100B † IDT		30
								24		IDT71681LA-100B † IDT IDT71681SA-100B † IDT IDT71682LA-100B † IDT IDT71682SA-100B † IDT		35
25	CMOS						5	22		IDT61970S-25B † IDT		
4Kx8	40	CMOS					5	44		MAP168-40 Wafer scale (3750)		
	45	CMOS					5	52		IDT71342L-45 † IDT IDT71342S-45 † IDT		
								44		MAP168-45 Wafer scale (3750)		40
		2-port					5	68		IDT7134L-45 † IDT		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx8	55	CMOS					5	52		IDT71342L-55	(Cont'd)	5
										‡ IDT		
									IDT71342S-55			
									‡ IDT			
							44		MAP168-55	Waferscale (3750)		
		2-port					5	68	IDT7134L-55	‡ IDT		
	70	CMOS					5	52		IDT71342L-70		
										‡ IDT		
									IDT71342S-70	‡ IDT		
			2-Port					5	68	IDT7134L-70		
4Kx9	25	CMOS					5	28		MK45H04-25	SGS-Thomson	10
	35	CMOS					5	28		MK45H04-35	SGS-Thomson	
	50	CMOS					5	28		MK45H04-50	SGS-Thomson	
	65	CMOS					5	28		MK45H04-65	SGS-Thomson	
	120	CMOS					5	28		MK45H04-12	SGS-Thomson	
4Kx10	20	CMOS					5	44		MCM62963-20	Motorola	15
	25	CMOS					5	44		MCM62963-25	Motorola	
	30	CMOS					5	44		MCM62963-30	Motorola	
4Kx12	20	CMOS					5	44		MCM62973-20	20	
										‡ Motorola		
										MCM62974-20		‡ Motorola
	25	CMOS				5	44		MCM62973-25			
									‡ Motorola			
									MCM62974-25	*† Motorola		
	30	CMOS				5	44		MCM62973-30			
									‡ Motorola			
									MCM62974-30	‡ Motorola		
4Kx16	25	CMOS					5	40		IDT71586S-25	25	
										IDT7186L-25		IDT
										IDT7186S-25		IDT
	35	CMOS				5	48		IDT71502L-35			
									‡ IDT			
									IDT71502S-35	‡ IDT		
	40							40		IDT71586S-35		IDT
										IDT71586S-35B		‡ IDT
										IDT7186L-35		IDT
										IDT7186L-35B		‡ IDT
										IDT7186S-35		IDT
										IDT7186S-35B		‡ IDT
	45	CMOS					5	48		IDT71502L-45		30
										‡ IDT		
										IDT71502S-45		
	55	CMOS						5	48			IDT71586S-45
IDT71586S-45B											‡ IDT	
IDT7186L-45											‡ IDT	
IDT7186L-45B											‡ IDT	
IDT7186S-45											‡ IDT	
IDT7186S-45B											‡ IDT	
IDT71502L-55											‡ IDT	
IDT71502L-55B											‡ IDT	
IDT71502S-55											‡ IDT	
IDT71502S-55B	‡ IDT											
	IDT71502S-55B	‡ IDT										
	‡ IDT											
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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
4Kx16	55	CMOS					5	40		IDT71586S-55B ‡ IDT IDT7186L-55 ‡ IDT IDT7186L-55B ‡ IDT IDT7186S-55 ‡ IDT IDT7186S-55B ‡ IDT	(Cont'd)	5
	70	CMOS					5	48		IDT71502L-70B ‡ IDT IDT71502S-70B ‡ IDT		
								40		IDT7186L-70B ‡ IDT IDT7186S-70B ‡ IDT		
8Kx8		CMOS						5		MT5C6408 883C-45 ‡ MicronTech		10
	10	BiCMOS					5	28		CY7B185-10C Cypress (3433)		
		CMOS					5	28		ATT7C185-10 ‡ AT&T (3401)		
		TTL		Common	50	150	45	28		MT5C6408-10 MicronTech		
	12	BiCMOS					5	28		CY7B185-12C ‡ Aspen CY7B186-12C ‡ Aspen CY7B185-12C Cypress (3433)		15
		CMOS					5	28		CY7B186-12C ‡ Cypress KM68BC66-12 Samsung		
							5	28		ATT7C185-12 ‡ AT&T (3401)		20
		TTL		Common	45	140	5	28		ATT7C186-12 ‡ AT&T MT5C6408 883C-12 ‡ MicronTech		
	15	BiCMOS					5	28		MT5C6408-12 MicronTech (3581)		
							5	28		CY7B185-15C ‡ Aspen CY7B185-15M ‡ Aspen CY7B186-15C ‡ Aspen CY7B186-15M ‡ Aspen CY7B185-15C Cypress (3433)		25
							5	28		CY7B185-15M ‡ Cypress (3433)		
							5	28		CY7B186-15C ‡ Cypress CY7B186-15M ‡ Cypress KM68BC66-15 Samsung		30
							5	28		ATT7C185-15 ‡ AT&T (3401)		35
							5	28		ATT7C186-15 ‡ AT&T AT3864-15 ‡ ATMEL S8KX8-015 Micro-C		
							5	28		MT5C6408 883C-15 ‡ MicronTech MCM6264-15 ‡ Motorola P4C164-15C ‡ Performance TC5588-15 Toshiba VT20C98-15 ‡ VLSI Tech VT20C98L-15 ‡ VLSI Tech VT20C99-15 ‡ VLSI Tech		40
		TTL		Common	40	120	5	28		MT5C6468-15 MicronTech		
					50	130	5	28		MT5C6408-15 MicronTech		
		TTL					5	28		M5M5178A-15 ‡ Mitsubishi		45
17		CMOS					5	28		P4C164-17C ‡ Performance		
20		BiCMOS					5	28		KM68BC66-20 Samsung		
		CMOS					5	28		ATT7C185-20 ‡ AT&T (3401)		
							5	28		ATT7C186-20 ‡ AT&T CY7C185-20C ‡ Cypress		50

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	20	CMOS					5	28		CY7C185A-20C • Cypress CY7C185A-20M *† Cypress CY7C186-20C Cypress CY7C186A-20C • Cypress CY7C186A-20M *† Cypress IS61C64L-20 ISSI IS61C64S-20 ISSI L7C185C-20 • LogicDev MT5C6408 883C-20 •† MicronTech MCM6264-20 • Motorola P4C164-20C Performance P4C164-20M •† Performance P4C164L-20C Performance MK48H98-20 SGS-Thomson CXK5863A-20 • Sony TC5588-20 Toshiba VT20C98-20 • VLSI Tech VT20C98L-20 • VLSI Tech VT20C99-20 • VLSI Tech		5
		TTL					5	28		M5M5178A-20 • Mitsubishi		20
25	CMOS						5	28		ATT7C186-25 • AT&T CY7C185-25C • Cypress CY7C185A-25C • Cypress CY7C185A-25M *† Cypress CY7C186-25C • Cypress CY7C186A-25C • Cypress CY7C186A-25M *† Cypress IS61C64L-25 ISSI IS61C64S-25 ISSI L7C185C-25 • LogicDev L7C185M-25 •† LogicDev S8KX8-025 Micro-C MT5C6408 883C-25 •† MicronTech MS6264AL-25 • Mose! MCM6264-25 Motorola P4C164-25C Performance P4C164-25M † Performance P4C164L-25C Performance P4C164L-25M † Performance CXK5863-25 Sony TC5588-25 Toshiba UM6164-25 • UMC V63C64-25 • Vitalic (3747) VT20C98-25 • VLSI Tech VT20C98L-25 • VLSI Tech VT20C99-25 • VLSI Tech		25
		TTL					5	32		MT5C6408-25 • MicronTech (3581)		35
30	CMOS						5	36 28		HC6364 •† Honeywell IDT71C65L-30 •† IDT IDT71C65S-30 •† IDT IDT7164L-30 •† IDT IDT7164S-30 •† IDT IDT7165L-30 •† IDT		50

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

• Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	30	CMOS					5	28			(Cont'd)	
										IDT7165S-30		
										‡ IDT		
										IS61C64L-30	ISSI	
										IS61C64S-30	ISSI	
										MCM6264-30	Motorola	5
										P4C164-30C	Performance	
										P4C164-30M	† Performance	
										P4C164L-30C	Performance	
										P4C164L-30M	† Performance	
										MK48H98-30	SGS-Thomson	10
										CXK5863-30	Sony	
										V63C64-30	‡ Vitelec (3747)	
		TTL	Common		30	100	5	28		MT5C6408-30	MicronTech	
35		CMOS					5	28		MK48S74-35	‡ SGS-Thomson	
							5	28		CY7C185-35C		
										‡ Cypress		15
										CY7C185A-35C	‡ Cypress	
										CY7C185A-35M	† Cypress	
										CY7C186-35C	‡ Cypress	
										CY7C186A-35C	‡ Cypress	
										CY7C186A-35M	† Cypress	
										ED18808CA35B		20
										‡ EDI		
										MB81C78A-35	Fujitsu	
										MB81C79A-35	‡ Fujitsu	
										IDT71C65L-35		
										‡ IDT		
										IDT71C65L-35B		
										‡ IDT		
										IDT71C65S-35		25
										‡ IDT		
										IDT71C65S-35B		
										‡ IDT		
										IDT7164L-35		
										‡ IDT		
										IDT7164L-35B		
										‡ IDT		
										IDT7164S-35		
										‡ IDT		
										IDT7164S-35B		30
										‡ IDT		
										IDT7165L-35	‡ IDT	
										IDT7165L-35B		
										‡ IDT		
										IDT7165S-35	‡ IDT	
										IDT7165S-35B		
										‡ IDT		
										IDT7174S-35	‡ IDT	35
										IDT7174S-35B		
										‡ IDT		
										L7C185C-35	‡ LogicDev	
										L7C185M-35	‡ LogicDev	
										S8KX8-035	Micro-C	
										MT5C6408		40
										883C-35	‡ MicronTech	
										MS6264AL-35C	Mosel	
										MCM6264-35	Motorola	
										P4C164-35C	Performance	
										P4C164-35M	† Performance	45
										P4C164L-35C	Performance	
										P4C164L-35M	† Performance	
										MK48H74-35	SGS-Thomson	
										CXK5863-35	Sony	
										TC5588-35	Toshiba	
										UM6164-35	UMC	50
										V63C64-35	‡ Vitelec (3747)	
										V63C64-35L	‡ Vitelec (3747)	
										VT20C98-35	VLSI Tech	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	35	CMOS					5	28		VT20C98L-35 ♦ VLSI Tech VT20C99-35 ♦ VLSI Tech		
		TTL					5	28 32		MB81C78A Fujitsu MT5C6408-35 ♦ MicronTech (3581)		
40	CMOS						5	28		HS65647RH ‡ Harris (3529) MK48H98-40 SGS-Thomson		5
		CMOS/SOS					5	28		MAS9264 GEC Plessey		
45	CMOS						5	28		CY7C185-45C ♦ Cypress CY7C185A-45C ♦ Cypress CY7C185A-45M *† Cypress CY7C186-45C ♦ Cypress CY7C186A-45C ♦ Cypress CY7C186A-45M *† Cypress ED18808CA45B ♦† EDI MB81C78A-45 Fujitsu MB81C79A-45 ♦ Fujitsu		10
								58		IDT7M134S-45 ♦‡ IDT IDT7M144S-45 ♦‡ IDT		15
								28		IDT71C65L-45 ♦‡ IDT IDT71C65L-45B ♦‡ IDT IDT71C65S-45 ♦‡ IDT IDT71C65S-45B ♦‡ IDT IDT7164L-45 ♦*‡ IDT IDT7164L-45B ♦*† IDT IDT7164S-45 ♦*‡ IDT IDT7164S-45B ♦*† IDT IDT7165L-45 ♦* IDT IDT7165L-45B ♦*† IDT IDT7165S-45 ♦* IDT IDT7165S-45B ♦*† IDT IDT7174S-45 ♦ IDT IDT7174S-45B ♦† IDT L7C185C-45 ♦ LogicDev L7C185M-45 ♦† LogicDev S8KX8-045 Micro-C		20
										MS6264AL-45C Mosel MCM6264-45 ♦ Motorola P4C164-45M † Performance P4C164L-45M † Performance MK48H74-45 SGS-Thomson V63C64-45 ♦ Vitec (3747) V63C64-45L ♦ Vitec (3747)		35
							5	36		HC6264 ♦‡ Honeywell CY7C185-55C ♦ Cypress CY7C185A-55C ♦ Cypress CY7C185A-55M *† Cypress CY7C186-55C ♦ Cypress		45
							5	28				
50	TTL											
55	CMOS											

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	55	CMOS					5	28		CY7C186A-55C	(Cont'd)	5
										* Cypress		
										CY7C186A-55M		
										*† Cypress		
										EDI8808CA55B		
										† EDI		
										EDI8810H55B † EDI		
										EDI8810L55B † EDI (3466)		
								36		HC6364/2SHCC		10
										† Honeywell		
										IDT71C65L-55		
										† IDT		
										IDT71C65L-55B		
										† IDT		
										IDT71C65S-55		
										† IDT		
										IDT71C65S-55B		
										† IDT		
								28		IDT7164L-55B		15
										† IDT		
										IDT7164S-55B		
										† IDT		
										IDT7165L-55	† IDT	
										IDT7165L-55B		
										† IDT		
										IDT7165S-55	† IDT	
										IDT7165S-55B		
										† IDT		
										IDT7174S-55B		20
										† IDT		
										MT5C6408		
										883C-55	† MicronTech	
										MS6264AL-55C	Mosel	
										6164-55	† Motorola	
										MK48H74-55	SGS-Thomson	
										UT67164-55	† UPMC	
										V63C64-55	† Vitelec (3747)	
V63C64-55L	† Vitelec (3747)											
TTL/CMOS												
	x8	0.2	145	5	28					UT7164-55	† UPMC	25
60	CMOS				5	58				IDT7M144S-60		30
										† IDT		
										EDH8808ACL-70MHR		
										† EDI		
70	CMOS				5	28				EDI8808CA70B		
										† EDI		
										IDT7164L-70B		
										† IDT		
										IDT7164S-70B		
										† IDT		
										IDT7165L-70	† IDT	35
										IDT7165L-70B		
										IDT7165L-70B		
										† IDT		
										IDT7165S-70	† IDT	
										IDT7165S-70B		
										† IDT		
										S8KX8-070	Micro-C	
										MT5C6408		
										883C-70	† MicronTech	
										MS6264-70C	† Mosel	40
										MS6264AL-70C	† Mosel	
										MS6264L-70C	† Mosel	
										6164-70	† Motorola	
										CXK5864B-70L	Sony	
										UM6264-70	† UMC	
										HY6264ALL-70	Hyundai	45
										HY6264AL-70	Hyundai	
										HY6264A-70	Hyundai (3531)	
										KM6264A-07	Samsung	45
										KM6264AL-07	Samsung	
80	CMOS						5	28		MB8464A-80	† Fujitsu	
										S8KX8-080	Micro-C	
										(Continued)		

IC MASTER

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line															
Static—General Purpose										(Cont'd)																	
8Kx8	85	CMOS					5	28		(Cont'd)																	
										HY6264-85	Hyundai	5															
										HY6264L-85	Hyundai																
										IDT7164L-85B																	
										† IDT																	
										IDT7164S-85B																	
										† IDT																	
										IDT7165L-85B																	
										‡ IDT																	
										IDT7165S-85B																	
										‡ IDT																	
L7C185C-85	LogicDev																										
L7C185M-85	† LogicDev																										
				C	0.05	50	5	28		HY6264ALL-10	Hyundai	10															
										HY6264ALL-85	Hyundai																
										0.1	50	5	28	HY6264AL-85	Hyundai	10											
										1	50	5	28	HY6264A-85	Hyundai (3531)												
										TTL						5	28		LC3664A-85	Sanyo	15						
																			LC3664AL-85	Sanyo							
										90	CMOS						5	28		S8KX8-090	Micro-C	15					
																				SRM2264C-90	S-MOS (3693)						
										100		CMOS					5	28		AT3864L-10	ATMEL	20					
																				AT3864-10	ATMEL						
																				EDH8808ACL-10MHR							
† EDI																											
MB8464A-10	Fujitsu																										
MB8464A-10L	Fujitsu																										
MB8464A-10LL																											
	Fujitsu																										
MB8464A-10W	Fujitsu																										
MB8464A-100	Fujitsu																										
HM6264-10	Hitachi																										
HM6264L-10	Hitachi																										
HY6264-10	Hyundai																										
IDT7164L-100B		25																									
† IDT																											
IDT7164S-100B																											
† IDT																											
S8KX8-100	Micro-C																										
VC6264A-10L	Micro-Comp																										
								5	28		VC6264A-10LL	Micro-Comp	30														
											MS6264-10C	Mosel															
											MS6264L-100C																
												Mosel															
											MSM5165-10	OKI (3599)															
		BR6264A									ROHM																
																		5	28		SRM2264C-10	S-MOS (3693)	35				
																					LH5164D-10L	Sharp					
																					CXK5864B-10L	Sony					
																					TMS6264-10	Ti					
																					TMS6264L-10	Ti					
TC5565A-10	Toshiba																										
UM6264-10	UMC																										
UM6264L-10	UMC																										
					C	0.1	50	5	28				HY6264AL-10								Hyundai	40					
													1								50			5	28	HY6264A-10	Hyundai (3531)
													TTL								Parallel			0.1	90	5	28
		CMOS, Refurbished														5	28		6264-100	Krueger	50						
																			6264LP-100	Krueger (3548)							
																	5	28		KM6264A-10	Samsung		55				
																				KM6264AL-10	Samsung						
																				LC3664A	Sanyo						
																				LC3664A-100	Sanyo						
																				LC3664AL	Sanyo						
LC3664AL-100	Sanyo																										
								5	28											AT3864L-12	ATMEL						
																				AT3864-12	ATMEL						
																				EDH8808ACL-12MHR							
																				† EDI							
																				(Continued)							

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	120	CMOS					5	28		CDM6264-4	Harris	5
										HM6264A-12	* Hitachi	
										HM6264AL-12	* Hitachi	
										HY6264-12	Hyundai	
										HY6264L-12	Hyundai	
										IDT7164L-120B	† IDT	10
										IDT7164S-120B	† IDT	
										S8KX8-120	Micro-C	
										MSM5165L-12	OKI (3599)	
										SRM2264C-12	S-MOS (3693)	
										CXK5864B-12L	Sony	15
										TMS6264-12	TI	
										TMS6264L-12	TI	
										TC5565A-12	* Toshiba	
										UM6264-12	◊ UMC	
							5	28		UM6264L-12	◊ UMC	20
										HY6264ALL-12	◊ Hyundai	
										HY6264AL-12	◊ Hyundai	
										HY6264L-12	◊ Hyundai (3531)	
										HM8808AB	Harris	25
										6264-120	Krueger (3548)	
										6264LP-120	Krueger	
										KM6264A-12	Samsung	
										KM6264AL-12	Samsung	
							5	28		LC3664A	Sanyo	30
										LC3664A-120	Sanyo	
										LC3664AL	Sanyo	
										LC3664AL-120	Sanyo	
										LC3664A	TI	35
										AT3864L-15	ATMEL	
										EDH8808ACL-15MHR	† EDI	
										EDI8810H150B	† EDI	
										EDI8810150B	† EDI	
							5	28		MB8464A-15	◊ Fujitsu	40
										MB8464A-15L	◊ Fujitsu	
										MB8464A-15LL	◊ Fujitsu	
										MB8464A-15W	◊ Fujitsu	
										GM76C88L-15	GoldStar	45
										CDM6264-3	Harris	
										CDM6264AC/3	Harris	
										HM65642	† Harris	
										HM8808-8	† Harris	
							5	28		HM8808-9	Harris	50
										HM6264A-15	* Hitachi	
										HM6264AL-15	* Hitachi	
										HY6264-15	Hyundai	
										HY6264L-15	Hyundai	55
										IDT7164L-150B	† IDT	
										IDT7164S-150B	† IDT	
										S8KX8-150	Micro-C	
										MSM5165L-15	OKI (3599)	
										SRM2064C-15	S-MOS (3693)	
							5	28		TMS6264-15	TI	55
										TMS6264L-15	TI	
										TC5565A-15	* Toshiba	
										HM65642B	† Harris	
										HM65642B/883	† Harris	(Continued)
										6264-150	◊ Krueger (3548)	
										6264LP-150	◊ Krueger	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx8	200	CMOS					5	28		EDH8808ACL-20MHR † EDI	(Cont'd)	5
										HM6264A-20 * Hitachi HM6264AL-20 * Hitachi IDT7164L-2008 ♦† IDT IDT7164S-2008 ♦† IDT		
	250	CMOS					5	28		HM65642C ♦† Harris HM65642C/883 † Harris		10
										DS2064 Dallas MK48209B-25 SGS-Thomson		
										HS6564RH ‡ Harris		
8Kx9	15	BiCMOS CMOS					5	28		MB82B79-15 Fujitsu MCM6265-15 ♦ Motorola TC5589-15 ♦ Toshiba		15
										M5M5179A-15 ♦ Mitsubishi		
										MB82B79-20 Fujitsu MCM6265-20 ♦ Motorola P4C163-20C ♦ Performance P4C163L-20C ♦ Performance MK48H99-20 SGS-Thomson TC5589-20 ♦ Toshiba		
	20	BiCMOS CMOS					5	28		M5M5179A-20 ♦ Mitsubishi		20
										CY7C182-25C Cypress MCM6265-25 ♦ Motorola P4C163-25C ♦ Performance P4C163-25M ♦† Performance P4C163L-25C ♦ Performance P4C163L-25M ♦† Performance MK45H08-25 SGS-Thomson CXK5971-25 Sony TC5589-25 ♦ Toshiba		
										P4C163-30C ♦ Performance P4C163-30M ♦† Performance P4C163L-30C ♦ Performance P4C163L-30M ♦† Performance MK48H99-30 SGS-Thomson CXK5971-30 Sony		
	30	CMOS					5	28		CY7C182-35C Cypress CY7C182-35M † Cypress ED18908C35B ♦† EDI (3466) ED18908L35B † EDI ED18908P35B † EDI P4C163-35C ♦ Performance P4C163-35M ♦† Performance P4C163L-35C ♦ Performance P4C163L-35M ♦† Performance MK45H08-35 SGS-Thomson CXK5971-35 Sony		40
										MB81C79A ♦ Fujitsu		
										MK48H99-40 SGS-Thomson CY7C182-45C Cypress CY7C182-45M † Cypress ED18908C45B ♦† EDI (3466) P4C163-45M ♦† Performance P4C163L-45M ♦† Performance		
	40	CMOS					5	28		MK45H08-50 SGS-Thomson CY7C182-55M † Cypress ED18908C55B ♦† EDI (3466) (Continued)		55
	45	CMOS					5	28				50
	50	CMOS					5	28				55

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
8Kx9	65	CMOS					5	28		MK45H08-65 ED18908C70B † EDI (3466) ED18908L70B EDI ED18908P70B † EDI	SGS-Thomson	5
	70	CMOS					5	28				
	120	CMOS					5	28				
8Kx16	20	CMOS					5	52		QS8816-20	◊ Quality Semi	10
										QS8817-20	◊ Quality Semi	
	25	CMOS					5	52		MT56C0816	◊ MicronTech (3581)	
										QS8816-25	◊ Quality Semi	
8Kx18										QS8817-25	◊ Quality Semi	15
										QS8816-35	◊ Quality Semi	
	35	CMOS					5	52		QS8817-35	◊ Quality Semi	
										QS8811-20	◊ Quality Semi	
8Kx20	20	CMOS					5	52		QS8818-20	◊ Quality Semi	20
										QS8819-20	◊ Quality Semi	
	25	CMOS					5	52		QS8811-25	◊ Quality Semi	
										QS8818-25	◊ Quality Semi	
8Kx24										QS8819-25	◊ Quality Semi	25
										QS8811-35	◊ Quality Semi	
	30	CMOS					5	52		QS8818-35	◊ Quality Semi	
										QS8819-35	◊ Quality Semi	
12Kx8	23	CMOS					5	52		MCM62820-23	◊ Motorola	30
										MCM62820-30	◊ Motorola	
	35	CMOS					5	52		MCM56824-25	◊ Motorola	
										MCM56824-35	◊ Motorola	
16Kx1	6	ECL 10K					-5.2			SY10480-6	Synergy (3706)	35
		ECL 100K					-4.5			SY100480-6	Synergy (3706)	
		ECL 101K					-5.2			SY101480-6	Synergy (3706)	
	8	ECL 10K					-5.2			SY10480-8	Synergy (3706)	
10										SY100480-8	Synergy (3706)	40
										SY101480-8	Synergy (3706)	
										ATT7C167-10	◊ AT&T	
										MT5C1601-10	◊ MicronTech	
12		CMOS					5	20		MBM100480A-10	◊ Fujitsu	45
		TTL	Common	50	150		5	20		MBM10480A-10	◊ Fujitsu	
		ECL					-4.5	20		μPB100480-10	◊ NEC (3592)	
							-5.2	20		μPB10480-10	◊ NEC (3592)	
12										SY10480-10	Synergy (3706)	50
										SY100480-10	Synergy (3706)	
										SY101480-10	Synergy (3706)	
										ATT7C167-12	◊ AT&T	
12										IDT6167LA-12	◊ IDT	50
										IDT6167SA-12	◊ IDT	
										L7C167C-12	◊ LogicDev	
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx1	12	CMOS									(Cont'd)	
			TTL	Common	45	140	5	20		MT5C1601-12	MicronTech	
	15	CMOS					5	20		ATT7C167-15 ♦ AT&T CY7C167A-15C ♦ Cypress IDT6167LA-15 ♦* IDT IDT6167SA-15 ♦* IDT L7C167C-15 ♦ LogicDev L7C167M-15 ♦† LogicDev		5
			TTL	Common	40	120	5	20		MT5C1001-15	MicronTech	
		ECL					-4.5	20		MBM100480-15 ♦ Fujitsu MBM10480-15 ♦ Fujitsu 10480-15 Micro-C		10
							-5.2	20				
							-4.5	28		μPB100480-15 NEC (3592)		
							-5.2	20		μPB10480-15 NEC (3592)		
	15 nsf	CMOS					5	20		IS61C67-15 ISSI IS61C67L-15 ISSI		15
	20	CMOS					5	20		ATT7C167-20 ♦ AT&T CY7C167A-20C ♦ Cypress CY7C167A-20M ♦† Cypress IDT6167LA-20 ♦* IDT IDT6167LA-20B ♦* IDT IDT6167SA-20 ♦* IDT IDT6167SA-20B ♦* IDT IS61C67-20 ISSI IS61C67L-20 ISSI		20
								420		L7C167C-20 ♦ LogicDev L7C167M-20 ♦† LogicDev MK41H66-20 † SGS-Thomson MK41H67-20 † SGS-Thomson		25
			TTL	Common	40	110	5	20		MT5C1601-20	MicronTech	
	25	CMOS					5	20		CY7C167-25C Cypress CY7C167A-25C ♦ Cypress CY7C167A-25M ♦† Cypress IDT6167LA-25 ♦* IDT IDT6167LA-25B ♦* IDT IDT6167SA-25 ♦* IDT IDT6167SA-25B ♦* IDT IS61C67-25 ISSI IS61C67L-25 ISSI L7C167C-25 ♦ LogicDev L7C167M-25 ♦† LogicDev MK41H66-25 † SGS-Thomson MK41H67-25 † SGS-Thomson		30
								22		LH5262-25 Sharp		35
		ECL					-4.5	20		MBM100480-25 ♦ Fujitsu MBM10480-25 ♦ Fujitsu		40
							-5.2	20				45
			TTL				5	20		MT5C1601-25 ♦ MicronTech		
35	CMOS						5	20		CY7C167-35C Cypress CY7C167A-35C ♦ Cypress CY7C167A-35M ♦† Cypress HM6267-35 Hitachi		50

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx1	35	CMOS					5	20		(Cont'd)		
										IDT6167LA-35 ◊ IDT		
										IDT6167LA-35B ◊† IDT		
										IDT6167SA-35 ◊ IDT		
										IDT6167SA-35B ◊† IDT		
										L7C167C-35 ◊ LogicDev		5
										L7C167M-35 ◊† LogicDev		
										μPD4311-35 NEC (3591)		
										IMS1403-35 SGS-Thomson		
										IMS1403-35LM † SGS-Thomson		
										IMS1403-35M SGS-Thomson		10
								20		MK41H66-35 † SGS-Thomson		
										MK41H67-35 † SGS-Thomson		
								22		LH5262-35 Sharp		
								20		UM6168-35 UMC		
										V61C67-35 Vitelic		15
		TTL	Common		30	100	5	20		MT5C1601-35 MicronTech		
		NMOS					5	20		AM2167-35 AMD		
		TTL			20	120	5	20		2167-35 Krueger		
40		CMOS					5	20		V61C67-40 Vitelic		
		SOS					5	20		MAS9167 GEC Plessey		20
45		CMOS					5	20		CY7C167-45C Cypress		
										CY7C167-45M † Cypress		
										CY7C167A-45C ◊ Cypress		
										CY7C167A-45M ◊† Cypress		
										HM6267-45 Hitachi		25
										IDT6167LA-45B ◊† IDT		
										IDT6167SA-45B ◊† IDT		
										6167H-45 Krueger (3548)		
										L7C167C-45 ◊ LogicDev		
										L7C167M-45 ◊† LogicDev		
										S16KX1-045 Micro-C		30
										IMS1403-45 SGS-Thomson		
										IMS1403-45LM † SGS-Thomson		
										IMS1403-45M SGS-Thomson		
								20		V61C67-45 Vitelic		35
		NMOS					5	20		AM2167-45 AMD		
		TTL			20	120	5	20		2167-45 Krueger		
55		CMOS					5	20		HM65262S ◊ Harris		
										IDT6167LA-55B ◊† IDT		
										IDT6167SA-55B ◊† IDT		
										6167H-55 Krueger (3548)		40
										S16KX1-055 Micro-C		
										IMS1403-55LM † SGS-Thomson		
										STC6167M-55 † STC		
										UM6167-1 UMC		45
		NMOS					5	20		AM2167-55 AMD		
70		CMOS					5	20		HM65262B ◊ Harris		
										IDT6167LA-70B ◊† IDT		
										IDT6167SA-70B ◊† IDT		
										STC6167M-70 † STC		
										UM6167 UMC		50
										V61C67-70 Vitelic		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx1	70	CMOS	TTL		20	60	5	20		6167-70	◊ Krueger	(Cont'd)
			NMOS				5	20	AM2167-70	AMD		
			TTL		20	120	5	20	2167-70	Krueger		
	80	TTL					5	24	HC6167	◊‡ Honeywell	5	
	85	CMOS					5	20	HM65262	◊ Harris		
									HS65C262RH	‡ Harris		
									HS65C262RRH	‡ Harris		
									HS65T262RH	‡ Harris		
									HS65T262RRH	‡ Harris		
									IDT6167LA-85B	◊‡ IDT	10	
								IDT6167SA-85B	◊‡ IDT			
								L7C167C-85	◊ LogicDev			
								L7C167M-85	◊‡ LogicDev			
								S16KX1-085	Micro-C			
100	CMOS						5	20	IDT6167LA-100B	◊‡ IDT	15	
									IDT6167SA-100B	◊‡ IDT		
									STC6167M-100	‡ STC		
									6167-100	◊ Krueger		
120	CMOS/SOS					5	24	MA6167SOS	GEC Plessey			
16Kx4	5	ECL 10K					-5.2		SY10494-5	Synergy (3706)	20	
			ECL 100K				-4.5		SY100494-5	Synergy (3706)		
			ECL 101K				-5.2		SY101494-5	Synergy (3706)		
	7	BiCMOS					-5.2	28	SC5494-7	◊ Silicon Conn	25	
							-5.2	28	CY10E494-7C	◊ Aspen		
							-5.2	28	CY10E494-7C	Cypress		
							-5.2	28	CY101E494-7C	◊ Aspen		
							-5.2	28	CY101E494-7C	Cypress		
	8	BiCMOS					-4.5	28	IDT100494	IDT	30	
							-5.2	28	SC5494-8	◊ Silicon Conn		
		Bipolar					-5.2	28	MBM101494-8	◊ Fujitsu		
							-5.2	28	MBM10494-8	◊ Fujitsu		
							-5.2	28	IDT10494S-8	IDT	35	
	10	BiCMOS					-4.5	28	IDT100494S-8	IDT		
							-5.2	28	CY10E494-8C	Cypress		
							-5.2	28	CY101E494-8C	Cypress		
							5	28	CY7B161-10C	◊ Aspen	40	
							22	28	CY7B162-10C	◊ Aspen		
				24	28	CY7B164-10C	◊ Aspen					
				24	28	CY7B166-10C	◊ Aspen					
				22	28	CY7B160-10C	Cypress					
				24	28	CY7B161-10C	Cypress					
				22	28	CY7B162-10C	Cypress					
				24	28	CY7B164-10C	Cypress					
				24	28	CY7B166-10C	Cypress					
				-4.5	28	IDT100494	◊ IDT	45				
								IDT100494S10C	◊ IDT			
				-5.2	28	IDT10494S10C	IDT					
								SC5494-10	◊ Silicon Conn			
	CMOS					5	28	ATT7C161-10	◊ AT&T	50		
							ATT7C162-10	◊ AT&T				
							ATT7C164-10	◊ AT&T (3397)				
								ATT7C165-10	◊ AT&T (3397)			
								ATT7C166-10	◊ AT&T (3397)			
									(Continued)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	12	CMOS	TTL	Seperate	45	140	5	28		(Cont'd)		
										MT5C6406-12 MicronTech		
										MT5C6407-12 MicronTech (3580)		
										P4C198-12C • Performance		
										CY7B161-12M		
										CY7B162-12C • Cypress		
										CY7B162-12M		
										CY7B162-12M • Cypress		
										IDT10496LL-15 IDT		
										IDT10496RL-15 IDT		
										IDT10497S-12 IDT		
										IDT10498S-12 IDT		
										NM10494-12 • National		
										CY10E494L-12C		
										• Aspen		
										IDT100496LL-15 IDT		
										IDT100496RL-15 IDT		
										IDT100497S-12 IDT		
										IDT100498S-12 IDT		
										CY10E494L-12C Cypress		
										CY100E494L-12C		
										• Aspen		
										CY100E494L-12C Cypress		
15	BiCMOS						5	28		CY7B160-15C • Aspen		
										CY7B160-15M		
										CY7B161-15M		
										CY7B162-15M		
										CY7B164-15M		
										CY7B166-15M		
										CY7B160-15C Cypress		
										CY7B160-15M • Cypress		
										CY7B161-15M • Cypress		
										CY7B162-15M		
										CY7B164-15M • Cypress		
										CY7B166-15M • Cypress		
										IDT100494 • IDT		
										IDT100494S15C		
										IDT10494S15B		
										IDT10494S15C IDT		
										TMS6788-15 TI		
										TMS6789-15 TI		
		CMOS					5	28		ATT7C161-15 • AT&T		
										ATT7C162-15 • AT&T		
										ATT7C164-15 • AT&T (3397)		
										ATT7C165-15 • AT&T (3397)		
										ATT7C166-15 • AT&T (3397)		
								22		CY7C161-15C • Cypress		
										CY7C161A-15C		
										CY7C162-15C • Cypress		
										CY7C162A-15C		
										CY7C164-15C Cypress		
								22		CY7C164A-15C Cypress		
										CY7C166-15C Cypress		
										CY7C166A-15C Cypress		
										CY7C166A-15C Cypress		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

• Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	15	CMOS					5					
								24		IDT6198L-15 ♦ IDT IDT6198S-15 ♦ IDT	(Cont'd)	
								22		IDT7188L-15 ♦ IDT IDT7188S-15 ♦ IDT		
								24		IDT7198L-15 ♦ IDT IDT7198S-15 ♦ IDT		5
								28		IDT71981L-15 ♦ IDT IDT71981S-15 ♦ IDT IDT71982L-15 ♦ IDT IDT71982S-15 ♦ IDT IS61C61-15 ISSI IS61C61L-15 ISSI IS61C62-15 ISSI IS61C62L-15 ISSI		10
								22		IS61C66L-15 ISSI IS61C66S-15 ISSI		15
								24		IS61C88L-15 ISSI IS61C88S-15 ISSI		
								22		S16KX4-015 Micro-C MT5C6404 883C-15 † MicronTech		20
								24		MT5C6405 883C-15 ♦ MicronTech		
								22		MCM6288-15 ♦ Motorola MCM6288B-15 ♦ Motorola MCM6290-15 ♦ Motorola		
								24		MCM6290B-15 ♦ Motorola		25
								22		P4C188-15C ♦ Performance		
								24		P4C198-15C ♦ Performance P4C198-17C ♦ Performance P4C198A-15C ♦ Performance		
								28		P4C1981-15C ♦ Performance P4C1982-15C ♦ Performance QS8881-15 ♦ Quality Semi (3613) QS8882-15 ♦ Quality Semi (3613)		30
								24		QS8885-15 ♦ Quality Semi (3613) QS8886-15 ♦ Quality Semi (3613)		35
								22		QS8888-15 ♦ Quality Semi (3613) CXK5466-15 ♦ Sony CXK5467-15 ♦ Sony TC55416-15 ♦ Toshiba		
								24		TC55417-15 ♦ Toshiba		40
								28		VT62HL-15 ♦ VLSI Tech VT6285H-15 ♦ VLSI Tech VT6285HL-15 ♦ VLSI Tech VT6286H-15 ♦ VLSI Tech		
								22		VT6288H-15 ♦ VLSI Tech VT6288HL-15 ♦ VLSI Tech		45
								24		VT6289H-15 ♦ VLSI Tech VT6289HL-15 ♦ VLSI Tech		
								22		VT6290H-15 ♦ VLSI Tech		
								24		VT6291H-15 ♦ VLSI Tech (Continued)		50

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Tech-nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	15	CMOS	TTL	Common	40	120	5	22		(Cont'd)		
								24		MT5C6404-15	MicronTech	5
										MT5C6405-15	MicronTech	
					Seperate	40	120	5	28	MT5C6406-15	MicronTech	
										MT5C6407-15	MicronTech	
											(3580)	
							-5.2	28		MBM100C494-15		
										◊ Fujitsu		
							-4.5	28		MBM100C494-15		
										◊ Fujitsu		
16Kx4	15	CMOS	TTL	Common								10
16Kx4	15	CMOS	TTL	Common								15
16Kx4	15	CMOS	TTL	Common								20
16Kx4	15	CMOS	TTL	Common								25
16Kx4	15	CMOS	TTL	Common								30
16Kx4	15	CMOS	TTL	Common								35
16Kx4	15	CMOS	TTL	Common								40
16Kx4	15	CMOS	TTL	Common								45
16Kx4	15	CMOS	TTL	Common								50

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	20	CMOS				5		28		IDT71981L-20 ‡ IDT IDT71981S-20 ‡ IDT IDT71982L-20 ‡ IDT IDT71982S-20 ‡ IDT IS61C61-20 ISSI IS61C61L-20 ISSI IS61C62-20 ISSI IS61C62L-20 ISSI	(Cont'd)	5
								22		IS61C66L-20 ISSI IS61C66S-20 ISSI		10
								24		IS61C88L-20 ISSI IS61C88S-20 ISSI		
								28		L7C161C-20 † LogicDev L7C162C-20 † LogicDev		
								22 24		L7C164C-20 † LogicDev L7C165C-20 † LogicDev L7C166C-20 † LogicDev S16KX4-020 Micro-C		15
								22		MT5C6404 883C-20 † MicronTech		
								24		MT5C6405 883C-20 † MicronTech		20
								28		MT5C6407-20 MicronTech (3580)		
								24		MS6267A Mosel		
								22		MCM6288B-20 ‡ Motorola		
								24		MCM6290B-20 ‡ Motorola		25
								28		MCM6294-20 ‡ Motorola		
								22		P4C188-20C Performance P4C188-20M † Performance		
								24		P4C198-20C Performance P4C198-20M † Performance P4C1981-20C Performance		30
								28		P4C1981-20M ‡ Performance		
								24		P4C1981L-20C Performance P4C1982-20C Performance		
								28		P4C1982-20M ‡ Performance		35
								24		P4C1982L-20C Performance QS8881-20 † Quality Semi (3613) QS8882-20 † Quality Semi (3613)		
								24		QS8885-20 † Quality Semi (3613) QS8886-20 † Quality Semi (3613)		
								22		QS8888-20 † Quality Semi (3613) CXK5466-20 † Sony CXK5467-20 † Sony TC55416-20 † Toshiba		40
								24		TC55417-20 † Toshiba		
								28		VT6285H-20 † VLSI Tech VT6285HL-20 † VLSI Tech VT6286H-20 † VLSI Tech VT6286HL-20 † VLSI Tech		45
								22		VT6288H-20 † VLSI Tech VT6288HL-20 † VLSI Tech		50
								24		VT6289H-20 † VLSI Tech VT6289HL-20 † VLSI Tech		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	20	CMOS				5		22 24		VT6290H-20 VT6291H-20	VLSI Tech VLSI Tech	5
	25	BiCMOS				5		22 24		MT5C6404-20 MT5C6405-20	MicronTech MicronTech	10
16Kx4	20	CMOS				5		22 24		MT5C6406-20	MicronTech	15
	25	BiCMOS				5		22 24		TMS6788-25 TMS6789-25	TI TI	20
16Kx4	20	CMOS				5		22 24		CY7C161-25C CY7C161A-25C CY7C161A-25M CY7C162-25C CY7C162A-25C CY7C162A-25M	Cypress Cypress Cypress Cypress Cypress Cypress	25
	25	BiCMOS				5		22 24		CY7C164-25C CY7C164A-25C CY7C164A-25M	Cypress Cypress Cypress	30
16Kx4	20	CMOS				5		22 24		HM6788	Hitachi	35
	25	BiCMOS				5		22 24		IDT61592L-25 IDT61592S-25 IDT61593L-25 IDT61593S-25 IDT61594L-25 IDT61594S-25 IDT61595L-25 IDT61595S-25	IDT IDT IDT IDT IDT IDT IDT IDT	40
16Kx4	20	CMOS				5		22 24		IDT6198L-25 IDT6198L-25B IDT6198S-25 IDT6198S-25B	IDT IDT IDT IDT	45
	25	BiCMOS				5		22 24		IDT7188L-25 IDT7188L-25B IDT7188S-25 IDT7188S-25B	IDT IDT IDT IDT	50
16Kx4	20	CMOS				5		22 24		IDT7198L-25 IDT7198L-25B IDT7198S-25 IDT7198S-25B	IDT IDT IDT IDT	55
	25	BiCMOS				5		22 24		IDT7198L-25 IDT7198L-25B IDT7198S-25 IDT7198S-25B	IDT IDT IDT IDT	60

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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† Mtl Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Packages

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose											(Cont'd)	
16Kx4	25	CMOS					5	22		QS8888-25	Quality Semi (3613)	
										LH5265-25	Sharp	
								24		LH5267-25	Sharp (3623)	5
										CXK5465-25	Sony	
								22		TC55416-25	Toshiba	10
								24		TC55417-25	Toshiba	
								28		VT6285H-25	VLSI Tech	
										VT6285HL-25	VLSI Tech	
										VT6286H-25	VLSI Tech	
										VT6286HL-25	VLSI Tech	
								22		VT6288H-25	VLSI Tech	
										VT6288HL-25	VLSI Tech	
								24		VT6289H-25	VLSI Tech	15
										VT6289HL-25	VLSI Tech	
								22		VT6290H-25	VLSI Tech	
								24		VT6291H-25	VLSI Tech	
			TTL	Common	30	110	5	22		MT5C6404-25	MicronTech	20
								24		MT5C6405-25	MicronTech (3580)	
										MT5C6406-25	MicronTech (3580)	
								28				
										MB81C74	Fujitsu	
								5				
								28		IS61C62L-25	ISSI	25
										TMS6788-30	TI	
								24		TMS6789-30	TI	
								5		IDT61592L-30B		30
										† IDT		
										IDT61592S-30B		
										† IDT		
										IDT61593L-30B		
										† IDT		
										IDT61593S-30B		
										† IDT		
										IDT61594L-30B		
										† IDT		
										IDT61594S-30B		
										† IDT		
										IDT61595L-30B		
										† IDT		
										IDT61595S-30B		
										† IDT		
								24		IDT6198L-30	‡ IDT	35
										IDT6198L-30B	† IDT	
										IDT6198S-30	‡ IDT	
										IDT6198S-30B	† IDT	
								22		IDT7188L-30	* IDT	
										IDT7188L-30B		
										‡ IDT		
										IDT7188S-30	* IDT	
										IDT7188S-30B		
										† IDT		
								24		IDT7198L-30	* IDT	40
										IDT7198L-30B		
										‡ IDT		
										IDT7198S-30	* IDT	
										IDT7198S-30B		
										‡ IDT		
								28		IDT71981L-30	‡ IDT	45
										IDT71981L-30B		
										‡ IDT		
										IDT71981S-30	‡ IDT	
										IDT71981S-30B		
										‡ IDT		
										IDT71982L-30		
										‡ IDT		
										IDT71982L-30B	‡ IDT	
										‡ IDT		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	30	CMOS					5	28		IDT71982S-30 ◊* IDT IDT71982S-30B ◊† IDT	(Cont'd)	
								22		6288-30 S16KX4-030	◊ Krueger (3548) Micro-C	
								28		MT5C6407-30	MicronTech (3580)	5
								22		MCM6288-30		
								24		MCM6290-30	◊ Motorola	
								28		MCM6294-30	◊ Motorola	
										MCM6295-30	◊ Motorola	
								22		1620-30	† National	10
										1621-30	† National	
								24		1624-30	† National	
										1625-30	† National	
								22		P4C188-30C	Performance	15
										P4C188-30M	† Performance	
										P4C188L-30C	Performance	
										P4C188L-30M	† Performance	
								24		P4C198-30C	Performance	20
										P4C198-30M	† Performance	
										P4C198A-30C	Performance	
										P4C198A-30M	† Performance	
										P4C198AL-30C	Performance	
										P4C198AL-30M		
										† Performance		
										P4C198L-30C	Performance	25
										P4C198L-30M	† Performance	
								28		P4C1981-30C	Performance	30
										P4C1981-30M	† Performance	
										P4C1981L-30C	Performance	
										P4C1981L-30M		
										† Performance		
										P4C1982-30C	Performance	
										P4C1982-30M	† Performance	
										P4C1982L-30C	Performance	
										P4C1982L-30M		
										† Performance		
								24		CXK5465-30	◊ Sony	
				TTL	Common	30	100	5	22	MT5C6404-30	MicronTech	35
									24	MT5C6405-30	MicronTech	
					Seperate	30	100	5	28	MT5C6406-30	MicronTech	
35		CMOS					5	28		CY7C161-35C		
										CY7C161A-35C	◊ Cypress	
										CY7C161A-35M	† Cypress	40
										CY7C162-35C	◊ Cypress	
										CY7C162A-35C	◊ Cypress	
										CY7C162A-35M	† Cypress	
								22		CY7C164-35C	◊ Cypress	45
										CY7C164A-35C	Cypress	
										CY7C164A-35M	† Cypress	
								24		CY7C166-35C	◊ Cypress	
								22		CY7C166A-35C	Cypress	
										CY7C166A-35M	† Cypress	
										ED18416C35B	◊† EDI	50

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	35	CMOS				5		24		EDI8417C35B	(Cont'd)	
										† EDI MB81C75-35 Fujitsu IDT6198L-35 † IDT IDT6198L-35B † IDT IDT6198S-35 † IDT IDT6198S-35B † IDT		5
								22		IDT7188L-35 ° IDT IDT7188L-35B *† IDT IDT7188S-35 ° IDT IDT7188S-35B *† IDT		10
								24		IDT7198L-35 °* IDT IDT7198L-35B °*† IDT IDT7198S-35 °* IDT IDT7198S-35B † IDT		
								28		IDT71981L-35 ° IDT IDT71981L-35B † IDT IDT71981S-35 ° IDT IDT71981S-35B † IDT IDT71982L-35 ° IDT IDT71982L-35B °*† IDT IDT71982S-35 ° IDT IDT71982S-35B °*† IDT L7C161C-35 ° LogicDev L7C161M-35 † LogicDev L7C162C-35 ° LogicDev L7C162M-35 † LogicDev		15
								22		L7C164C-35 ° LogicDev L7C164M-35 † LogicDev		20
								24		L7C165C-35 ° LogicDev L7C165M-35 † LogicDev L7C166C-35 ° LogicDev		25
								22		L7C166M-35 † LogicDev MT5C6404 883C-35 † MicronTech		30
								24		MT5C6405 883C-35 °† MicronTech		
								28		MT5C6407-35 MicronTech (3580)		35
								22		MCM62188-35 Motorola MCM6295-35 ° Motorola F1620-35 † National F1620M † National		
								24		F1621-35 National		40
								22		F1621M † National		
								24		F1624-35 National F1624M † National		
								22		1620-35 † National 1621-35 † National		45
								24		1624-35 † National 1625-35 † National		
								22		P4C188-35C † Performance P4C188-35M † Performance P4C188L-35C Performance P4C188L-35M † Performance		50
								24		P4C198-35C Performance P4C198-35M † Performance P4C198A-35C Performance P4C198A-35M † Performance P4C198AL-35C Performance		55

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	35	CMOS					5	24		P4C198AL-35M	(Cont'd)	
										† Performance		
										P4C198L-35C	Performance	
										P4C198L-35M	† Performance	
								28		P4C1981-35C	Performance	5
										P4C1981-35M	† Performance	
										P4C1981L-35C	Performance	
										P4C1981L-35M		
										† Performance		
										P4C1982-35C	Performance	
										P4C1982-35M	† Performance	
										P4C1982L-35C	Performance	10
										P4C1982L-35M		
										† Performance		
								22		LH5265-35	Sharp	
								24		LH5267-35	Sharp (3623)	
										CXK5465-35	♦ Sony	15
										CXK5465P-35	Sony	
								22		TC55416-35	Toshiba	
								24		TC55417-35	Toshiba	
								28		VT6285H-35	♦ VLSI Tech	20
										VT6285HL-35	♦ VLSI Tech	
										VT6286H-35	♦ VLSI Tech	
										VT6286HL-35	♦ VLSI Tech	
								22		VT6288H-35	♦ VLSI Tech	
										VT6288HL-35	♦ VLSI Tech	
								24		VT6289H-35	♦ VLSI Tech	25
										VT6289HL-35	♦ VLSI Tech	
								22		VT6290H-35	♦ VLSI Tech	
								24		VT6291H-35	♦ VLSI Tech	
			TTL	Common	30	100	5	22		MT5C6404-35	MicronTech (3580)	
								24		MT5C6405-35	MicronTech (3580)	
			Seperate	30	100	5	5	28		MT5C6406-35	MicronTech (3580)	30
45	CMOS						5	28		CY7C161-45C	♦ Cypress	
										CY7C161A-45C	♦ Cypress	
										CY7C161A-45M	† Cypress	
										CY7C162-45C	♦ Cypress	
										CY7C162A-45C	♦ Cypress	35
										CY7C162A-45M	† Cypress	
								22		CY7C164-45C	♦ Cypress	
										CY7C164A-45C	Cypress	
										CY7C164A-45M	† Cypress	
								24		CY7C166-45C	♦ Cypress	40
								22		CY7C166A-45C	Cypress	
										CY7C166A-45M	† Cypress	
										ED18416C45B	♦ EDI	
								24		ED18417C45B	♦ EDI	
								22		MB81C74-45	Fujitsu	45
								24		MB81C75-45	Fujitsu	
										IDT6198L-45	♦ IDT	
										IDT6198L-45B	† IDT	
										IDT6198S-45	♦ IDT	
										IDT6198S-45B	† IDT	50
								22		IDT7188L-45	♦ IDT	
										IDT7188L-45B	† IDT	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

(Continued)

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	45	CMOS					5	22		IDT7188S-45 ° IDT IDT7188S-45B °† IDT	(Cont'd)	
								24		IDT7198L-45 ° IDT IDT7198L-45B °*† IDT IDT7198S-45 ° IDT IDT7198S-45B °*† IDT		5
								28		IDT71981L-45 ° IDT IDT71981L-45B °† IDT IDT71981S-45 ° IDT IDT71981S-45B °† IDT IDT71982L-45 °° IDT IDT71982L-45B °*† IDT IDT71982S-45 °° IDT IDT71982S-45B °*† IDT L7C161C-45 ° LogicDev L7C161M-45 °† LogicDev L7C162C-45 ° LogicDev L7C162M-45 °† LogicDev		10
								22		L7C164C-45 ° LogicDev L7C164M-45 °† LogicDev		20
								24		L7C165C-45 ° LogicDev L7C165M-45 °† LogicDev L7C166C-45 ° LogicDev L7C166M-45 °† LogicDev S16KX4-045 Micro-C		25
								22		MT5C6404 883C-45 † MicronTech		
								24		MT5C6405 883C-45 °† MicronTech		
								22		F1620-45 National		
								24		F1621-45 National F1624-45 National		30
								22		1620-45 † National 1621-45 † National		
								24		1624-45 † National 1625-45 † National		
								22		μPD4362-45 ° NEC (3591) MSM5188-45 OKI P4C188L-45M † Performance		35
								24		P4C198-45C Performance P4C198-45M † Performance P4C198A-45C Performance P4C198A-45M † Performance P4C198AL-45C Performance P4C198AL-45M † Performance P4C198L-45C Performance P4C198L-45M † Performance		40
								28		P4C1981-45M † Performance P4C1981L-45M † Performance P4C1982-45M † Performance P4C1982L-45M † Performance		45
								22		IMS1620-45 ° SGS-Thomson IMS1620-45M °*† SGS-Thomson		50
								24		IMS1624-45 SGS-Thomson		
								28		IMS1624-45M °† SGS-Thomson	(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	55	CMOS					5	22		ED18416C55B	(Cont'd)	5
										ED18417C55B		
										IDT6198L-55B † IDT		
										IDT6198S-55B † IDT		
										IDT7188L-55B		
										IDT7188S-55B		
										IDT7198L-55B		
										IDT7198S-55B		
										IDT71981L-55B		
										IDT71981S-55B		
										IDT71982L-55B		
										IDT71982S-55B		
										24		
	MT5C6404 † MicronTech											
	24		MT5C6405	15								
	883C-55 † MicronTech											
	22		1620-55 † National	15								
	1621-55 † National											
	24		1624-55 † National	20								
	1625-55 † National											
22		μPD4362-55 * NEC (3591)	20									
MSM5188-55 OKI												
24		P4C188-55M † Performance	25									
P4C188L-55M † Performance												
24		P4C198-55M † Performance	25									
P4C198A-55M † Performance												
28		P4C198AL-55M † Performance	30									
P4C198L-55M † Performance												
22		P4C1981-55M † Performance	30									
P4C1981L-55M † Performance												
22		P4C1982-55M † Performance	30									
P4C1982L-55M † Performance												
22		IMS1620-55 * SGS-Thomson	35									
IMS1620-55M † SGS-Thomson												
24		IMS1624-55 SGS-Thomson	35									
28		IMS1624-55M † SGS-Thomson										
70	CMOS						5	24		IDT6198L-70B † IDT	40	
										IDT6198S-70B † IDT		
										IDT7188L-70B		
										IDT7188S-70B		
										IDT7198L-70B		
22		IDT7198S-70B	40									
IDT71981L-70B												
24		IDT71981S-70B	40									
IDT71982L-70B												
28		IDT71982S-70B	40									
IDT71983L-70B												

(Continued)

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx4	70	CMOS					5	28		IDT71982L-70B *† IDT IDT71982S-70B *† IDT	(Cont'd)	5
										MT5C6404 883C-70 † MicronTech MT5C6405 883C-70 † MicronTech 1620-70 † National 1621-70 † National		
										1624-70 † National 1625-70 † National		
										μP04362-70 * NEC (3591) MSM5188-70 OKI IMS1620-70M *† SGS-Thomson		
										IMS1624-70 † SGS-Thomson IMS1624-70M *† SGS-Thomson		
85	CMOS						5	24		IDT6198L-85B † IDT IDT6198S-85B † IDT		15
										IDT7188L-85B *† IDT IDT7188S-85B *† IDT		
										IDT7198L-85B *† IDT IDT7198S-85B *† IDT		
										IDT71981L-85B *† IDT IDT71981S-85B *† IDT IDT71982L-85B *† IDT IDT71982S-85B *† IDT L7C161C-85 † LogicDev L7C161M-85 † LogicDev L7C162C-85 † LogicDev L7C162M-85 † LogicDev		
										L7C164C-85 † LogicDev L7C164M-85 † LogicDev		
										L7C165C-85 † LogicDev L7C165M-85 † LogicDev L7C166C-85 † LogicDev L7C166M-85 † LogicDev		
350	CMOS						5	40		HM6564 † Harris P4C188-12 † Performance		35
16Kx8	45	CMOS					5	58		IDT7M135S-45 *† IDT IDT7M145S-45 *† IDT		40
										MS6398-45 Mosel		
										IDT7M145S-60 *† IDT		
										HM8816H-8 † Harris MS6398-70 Mosel		
										MS6398-10 Mosel		
16Kx16	12	BiCMOS					5	52		CY7B155-12C Cypress CY7B156-12C Cypress		45
										CY7B155-15C Cypress CY7B156-15C Cypress		
										MT5C2516-15 MicronTech (3581) MT58C1616-15 MicronTech (3581) (Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
16Kx16	17	CMOS					5	52		EDI2816017C EDI28165C17C MT5C2516-17 MT58C1616-17 MCM62990FN17 MCM62995FN17	EDI EDI MicronTech (3581) MicronTech (3581) Motorola Motorola	5
							5	52		CY7B155-20C CY7B156-20C	Cypress Cypress	
							5	52		MT5C2516-20 MT58C1616-20 MCM62990FN20 MCM62995FN20	MicronTech (3581) MicronTech (3581) Motorola Motorola	10
							5	52		VT7C157-20	◊ VLSI Tech	
							5	52		VT7C157-24 EDI28160C25C MT5C2516-25 MT58C1616-25	◊ VLSI Tech EDI MicronTech (3581) MicronTech (3581)	15
	33	CMOS					5	52		VT7C157-33	◊ VLSI Tech	
							5	40		DPS257-35	◊‡ Dense-Pac	
	35	CMOS						36		EDH816H16C-35C	EDI	20
							5	36		EDH816H16C-45C	EDI	
	50	CMOS					5	40		IDT8M656S-50	IDT	
							5	40		IDT8M656S-60	IDT	
							5	40		IDT8M656S-70	IDT	
							5	40		IDT8M656S-85	IDT	
							5			HM92560	Harris	25
	150	CMOS					5			HM92560-5	Harris	
	250	CMOS					5			HM92570	Harris	
	300	CMOS					5			HM92570-5	Harris	
16Kx18	15	CMOS					5	52		MT5C2818-15 MT58C1618-15	MicronTech (3581) MicronTech (3581)	30
							5	52		MT5C2818-17 MT58C1618-17	MicronTech (3581) MicronTech (3581)	
	20	CMOS					5	52		MT5C2818-20 MT58C1618-20	MicronTech (3581) MicronTech (3581)	35
	25	CMOS					5	52		MT5C2818-25 MT58C1618-25	MicronTech (3581) MicronTech (3581)	
							5	52		MT5C2818-25 MT58C1618-25	MicronTech (3581) MicronTech (3581)	
16Kx25	25	CMOS					5	52		EDI28165C25C	EDI	
16Kx32	30	CMOS					5	88		IDT7MC4032-30	◊‡ IDT	
32Kx8	10	BiCMOS	TTL/CMOS	Common	30	170	5	28		TC55B328-10	◊ Toshiba (3723)	40
			CMOS	TTL/CMOS	COMMON	50uA	45	5	28	μPD43256A-10	◊ NEC	
							5	28		CY7B198-12C CY7B199-12C	Cypress Cypress (3433)	
	12	BiCMOS					5	28				
			TTL/CMOS	Common	30	170	5	28		TC55B228-12	◊ Toshiba (Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	12	CMOS	CMOS/TTL	Common	10	275	5	28		ATT7C199-12	AT&T	(Cont'd)
				TTL/CMOS	Common	50uA	45	5	28	μPD43256A-12	NEC	
15	15	BiCMOS					5	28		CY7B198-15C	Cypress	5
										CY7B198-15M †	Cypress	
										CY7B199-15C	Cypress	
										CY7B199-15M †	Cypress	
										(3433)		
			TTL/CMOS	Common	30	170	5	28		TC55B328-15	Toshiba	(3723)
			CMOS				5	28		VT62832UH-15	VLSI Tech	
										VT62832UHL-15	VLSI Tech	
			CMOS/TTL	Common	10	240	5	28		ATT7C199-15	AT&T	(3403)
			TTL	Common	25	140	5	28		P4C1256-15C	Performance	
17	20	CMOS					5	28		TC55328-17	Toshiba	15
							5	28		AT38256-20	ATMEL	
							5	28		CY7B198-20C	Cypress	
							5	28		CY7B198-20M †	Cypress	
										CY7B199-20C	Cypress	(3433)
										CY7B199-20M †	Cypress	
										(3433)		
			CMOS				5	28		MT5C2568		
										883C-20	† MicronTech	
										MCM6206-20		
										° Motorola		
										PDM41256L-20	Paradigm	20
										PDM41256S-20	Paradigm	
										° Paradigm		
										TC55328-20	Toshiba	
										VT62832H-20	VLSI Tech	
										VT62832HL-20	VLSI Tech	
										VT62832UH-20	VLSI Tech	25
			CMOS/TTL	Common	10	185	5	28		ATT7C199-20	AT&T	(3403)
			TTL	Common	30	105	5	28		MT5C2568-20	MicronTech	
										(3581)		
25		CMOS					5	28		AT38256-25	† ATMEL	30
							5	28		CY7C198-25C	Cypress	
										CY7C199-25C	Cypress	
										DPS32M8A-25	Dense-Pac	
										EDI8834C25B †	EDI	(3463, 3466)
										EDI8834C25C	EDI	
										(3463)		
												35
												40
												45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

° Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	25	CMOS					5	28		VT62832UHL-20 ◊ VLSI Tech	(Cont'd)	5
										VT62832UHL-25 ◊ VLSI Tech		
										CMOS/TTL		
										Common 10 150 5 28		
										TTL Common 25 110 5 28 30 140 5 28		
30	CMOS						5	28		IDT71256L-30 ◊* IDT		10
										IDT71256S-30 ◊* IDT		
										IS61C256-25 ISSI		
										IS61C256L-25 ISSI		
										AT38256-35 ◊† AT&T CY7C198-35C ◊ Cypress CY7C198-35M Cypress CY7C199-35C ◊ Cypress CY7C199-35M † Cypress DPS32M8A-35 Dense-Pac ED18833C35B ◊† EDI (3466) ED18833L35B † EDI ED18833P35B † EDI		
32 28		CMOS					5	28		MB8287-35 Fujitsu		20
										IDT71256L-35 ◊*‡ IDT		
										IDT71256L-35B ◊*† IDT		
										IDT71256S-35 ◊*‡ IDT		
										IDT71256S-35B ◊*† IDT		
										IS61C256L-35 ISSI		25
										MT5C2568		
										883C-35 ◊† MicronTech		
										MS62256-35 ◊ Mosel		
										MS62256L-35C Mosel		
										MCM6206-35 ◊ Motorola		30
										PDM41256L-35 ◊ Paradigm		
										PDM41256L-35B ◊† Paradigm		
										PDM41256S-35 ◊ Paradigm		
										PDM41256S-35B ◊† Paradigm		
										KM68257-35 Samsung		35
										LH52258-35 Sharp (3623)		
										CXK58258-35 ◊ Sony (3694)		
										TC55328-35 ◊ Toshiba		
										VT62832-35 VLSI Tech		
										VT62832H-35 ◊ VLSI Tech		40
										VT62832HL-35 ◊ VLSI Tech		
										VT62832UH-25 ◊ VLSI Tech		
										V62832L-35 ◊ VLSI Tech		
										MT5C2568-35 MicronTech (3581)		
45	CMOS						5	28		CY7C198-45C ◊ Cypress		45
										CY7C198-45M ◊† Cypress		
										CY7C199-45C ◊ Cypress		
										CY7C199-45M ◊† Cypress		
										DPS32M8A-45 Dense-Pac		
										EDH8832HC-45MHR † EDI		50
										ED18833C45B ◊† EDI (3466)		
										IDT71256L-45 ◊* IDT		
										IDT71256L-45B ◊*‡ IDT		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Tech-nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	45	CMOS					5	28		IDT71256S-45 ◊* IDT IDT71256S-45B ◊* IDT MT5C2568 883C-45 ◊† MicronTech MS62256-45 ◊ Mosel MS62256L-45C Mosel MS6399-45 Mosel		5
										MCM6206-45 ◊* Motorola PDM41256L-45 ◊ Paradigm PDM41256L-45B ◊† Paradigm PDM41256S-45 ◊ Paradigm PDM41256S-45B ◊† Paradigm KM68257-45 Samsung LH52258-45 Sharp (3623) CXK58258-45 ◊ Sony (3694) VT62832-45 VLSI Tech VT62832H-45 ◊ VLSI Tech VT62832HL-45 ◊ VLSI Tech VT62832L-45 ◊ VLSI Tech		10
			TTL	Common	25	90	5	28		MT5C2568-45 MicronTech (3581)		
			TTL				5	28		MSM832U-45 Mosaic Semi		20
50	CMOS						5	36		HC6856/1SHZC ◊‡ Honeywell CY7C198-55C ◊ Cypress CY7C198-55M ◊† Cypress CY7C199-55C ◊ Cypress CY7C199-55M ◊† Cypress DPS32M8A-55 Dense-Pac EDH8832HC-55MHR † EDI EDI8832C55B ◊† EDI (3466) EDI8833C55B ◊† EDI (3466) EDI8833L55B † EDI EDI8833P55B † EDI EDI8834C55C EDI (3463, 3466) S32K8-55CC Inova S32K8L-55CC Inova IDT71256L-55 ◊* IDT IDT71256L-55B ◊*† IDT IDT71256S-55 ◊* IDT IDT71256S-55B ◊*† IDT MT5C2568 883C-55 ◊† MicronTech		25
55	CMOS						5	28		MS62256-55 ◊ Mosel MS62256L-55C ◊ Mosel PDM41256L-55B ◊† Paradigm PDM41256S-55B ◊† Paradigm KM68257-55 Samsung		30
			TTL/CMOS	COMMON								
					50uA	45	5	28		μPD43256B-55 NEC		45
			TTL				5	28		MSM832U-55 ◊ Mosaic Semi LH52256-55 Sharp (3623)		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	60	CMOS					5	28		ED18832C60B † EDI (3466)		
	70	CMOS					5	28		DPS32M8A-70 Dense-Pac EDH8832C-70MHR ‡ EDI EDH8832P-70MHR ‡ EDI ED18832C70B † EDI (3466) ED18832P70B ‡ EDI MB84256A-70 † Fujitsu (3474) MB84256A-70L † Fujitsu (3474) MB84256A-70LL † Fujitsu (3474) S32K8-70CC Inova S32K8-70IC Inova S32K8-70MC † Inova S32K8L-70CC Inova S32K8L-70IC Inova S32K8L-70MC † Inova IDT71256L-70B ‡ IDT IDT71256S-70B ‡ IDT MT5C2568 883C-70 † MicronTech MSM832-70 Mosaic Semi		5
										MS62256L-70C ‡ Mosel MS6399-70 Mosel		10
										LH52256L-70 Sharp (3623) CXX58257A-70L ‡ Sony CXX58257A-70LL ‡ Sony		15
				Common	0.05	70	5	28		HY62256ALL-70 ‡ Hyundai		20
					0.1	70	5	28		HY62256AL-70 ‡ Hyundai		
					1	70	5	28		HY62256A-70 ‡ Hyundai (3531)		25
		TTL/CMOS		COMMON	50uA	45	5	28		μPD43256B-70 ‡ NEC		
		TTL					5	28		LH52256-70 Sharp (3623)		30
80		CMOS					5	28		MB84256A-80 Fujitsu HY63C256-80 Hyundai HY63C256L-80 Hyundai		
		TTL					5	28		KM62256A-08 Samsung KM62256AL-08 Samsung		
85		CMOS					5	28		CAT71C256L-85 Catalyst Semi CAT71C256LI-85 Catalyst Semi (3425) DPS32M8A-85 Dense-Pac EDH8832C-85MHR ‡ EDI EDH8832P-85MHR ‡ EDI ED18832C85B † EDI (3466) ED18832P85B ‡ EDI GM76C256L-85 GoldStar HM62256-8 ‡ Hitachi HM62256L-8 ‡ Hitachi HM62256SL-8 ‡ Hitachi S32K8-85CC Inova S32K8-85IC Inova S32K8-85MC † Inova S32K8L-85CC Inova S32K8L-85IC Inova S32K8L-85MC † Inova IDT71256L-85B ‡ IDT		35
												40
												45
												50

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	85	CMOS					5	28		IDT71256S-85B ♦† IDT S32KX8-085 Micro-C	(Cont'd)	
										MSM832-85 Mosaic Semi MS62256L-85C Mosel 60L256A-85 ♦* Motorola μPD43256A-85L ♦ NEC μPD43256A-85LL ♦ NEC CXK58257A-85L ♦ Sony CXK58257A-85LL ♦ Sony TMS62256-85 TI TMS62256L-85 TI TC55257A-85 * Toshiba		5
					Common	0.05	70	5	28	HY622256ALL-85 ♦ Hyundai		10
						0.1	70	5	28	HY62256AL-85 ♦ Hyundai		
						1	70	5	28	HY62256A-85 ♦ Hyundai (3531)		15
		TTL/CMOS			COMMON							
						50uA	45	5	28	μPD43256B-85 ♦ NEC		
		Mix MOS						5	28	TC55257B-85 * Toshiba		
90		CMOS						5	28	LH52256L-90 Sharp (3623)		
		TTL						5	28	LH52256-90 Sharp (3623)		
100		CMOS						5	28	CDM62256-10 Harris EDH8832C-10MHR ♦† EDI EDH8832P-10MHR ♦† EDI EDI8832C100B ♦† EDI (3466) EDI8832P100B ♦† EDI MB84256A-10 ♦ Fujitsu (3474) MB84256A-10L ♦ Fujitsu (3474) MB84256A-10LL ♦ Fujitsu MB84256A-100 Fujitsu GM76C256-10 GoldStar GM76C256L-10 GoldStar CDM62256 Harris HM62256-10 * Hitachi HM62256L-10 * Hitachi HM62256SL-10 Hitachi HY63C256-10 Hyundai HY63C256L-10 Hyundai S32K8-100IC Inova S32K8-100MC † Inova S32K8L-100IC Inova S32K8L-100MC † Inova IS62C256L-100 ISSI IS62C256S-100 ISSI		20
										62256-10 Krueger 65256-10 ♦ Krueger (3548)		25
										S32KX8-100 Micro-C 27C256-10 Micro-C VC62256A-10L Micro-Comp VC62256A-10LL Micro-Comp MSM832-10 Mosaic Semi		30
										MS62256L-10 ♦ Mosel MS6399-10 Mosel		35
										60L256A-10 ♦* Motorola NM43256A-10 National μPD43256A-10L ♦ NEC		40
										(Continued)		45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx8	100	CMOS					5	28		μPD43256A-10LL ◊ NEC MSM51257L-10 ◊ OKI BR62256A ROHM SRM20256C-10 S-MOS (3693) LC36256L Sanyo LH51256-10 Sharp (3623) CXK58257A-10L Sony CXK58257A-10LL ◊ Sony TMS62256-10 TI TMS62256L-10 TI		5
								32		UM62256-10 ◊ UMC		10
				Common	0.05	70	5	28		HY62256ALL-10 ◊ Hyundai HY62256AL-10 ◊ Hyundai HY62256A-10 ◊ Hyundai (3531)		15
					0.1	70	5	28				
					1	70	5	28				
		Mix MOS					5	28		TC55257B-10 * Toshiba TC55257A-10 * Toshiba MCM60L256A-C10 * Motorola MCM60L256A-V10 * Motorola KM62256A-10 Samsung KM62256AL-10 Samsung LC36256-100 Sanyo		20
		NMOS					5	28				
		TTL					5	28				
120		CMOS					5	28		CDM62256-12 Harris EDH8832C-12MHR ◊† EDI EDH8832P-12MHR ◊† EDI ED18832C120B ◊† EDI (3466) ED18832P120B ◊† EDI MB84256A-12 ◊ Fujitsu (3474) MB84256A-12L ◊ Fujitsu (3474) MB84256A-12LL ◊ Fujitsu (3474) GM76C256-12 GoldStar GM76C256L-12 GoldStar HM62256-12 * Hitachi HM62256L-12 * Hitachi HM62256SL-12 * Hitachi HY63C256-12 Hyundai HY63C256L-12 Hyundai 62256-12 Krueger 65256-12 ◊ Krueger (3548) MSM832-12 Mosaic Semi		25
										60L256A-12 ◊* Motorola NM43256A-12 National MSM51257L-12 ◊ OKI SRM20256C-12 S-MOS (3693) LH51256-12 Sharp (3623) LH52256L-12 ◊ Sharp (3623) CXK58257A-12L Sony CXK58257A-12LL ◊ Sony TMS62256-12 TI TMS62256L-12 TI TC55257A-12 * Toshiba		30
												35
												40
												45
												50
								32		UM62256-12 ◊ UMC		
								28		UM62256A-10 ◊ UMC		
				Common	0.05	70	5	28		HY62256ALL-12 ◊ Hyundai HY62256AL-12 ◊ Hyundai HY62256A-12 ◊ Hyundai (3531)		55
					0.1	70	5	28				
					1	70	5	28				
		Pseudo					5	28		HM65256B-12 Hitachi SX32KX8-120 Micro-C (Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line		
Static—General Purpose										(Cont'd)				
32Kx8	120	TTL					5	28		KM62256A-12	Samsung	5		
									KM62256AL-12	Samsung				
									LC36256-120	Sanyo				
									LC36256P/PM	Sanyo				
									LC36256P/PM	Sanyo				
									LC36256P/PM	Sanyo				
	150	CMOS						5	28		EDH8832C-15MHR		10	
											† EDI			
											EDH8832P-15MHR			
											† EDI			
											EDI8832C150B	† EDI (3466)		
											EDI8832P150B			
											† EDI			
											MBM27C256A	◊ Fujitsu		
											MB84256A-15	◊ Fujitsu (3474)		
											MB84256A-15L	◊ Fujitsu (3474)		
											MB84256A-15LL	◊ Fujitsu (3474)		
											GM76C256-85	GoldStar		
											HM62256-15 *	Hitachi		
											HM62256L-15 *	Hitachi		
											HY63C256-15	Hyundai		
								HY63C256L-15	Hyundai					
								62256-15	Krueger					
								MSM832-15	Mosaic Semi					
									NM43256A-15	National				
									BR62256	◊ ROHM				
									LH51256-15	Sharp (3623)				
									TMS62256-15	Ti				
									TMS62256L-15	Ti				
									UM62256-15	◊ UMC				
									UM62256A-15	◊ UMC				
		Pseudo					5	28		HM65256B-15	Hitachi			
									SX32KX8-150	Micro-C				
		TTL					5	28		LC36256-150	Sanyo			
										LC36256P/PM	Sanyo			
	200	CMOS					5	28		S32KX8-200	Micro-C			
	12	CMOS	TTL	Common	25	140	5	28		P4C1256-12C	◊ Performance			
	55	CMOS					5	28		EDI8834C55B	† EDI (3463, 3466)			
32Kx9	10	BiCMOS	TTL/CMOS	Common	10	170	5	32		TC55B329-10	◊ Toshiba (3723)	35		
	12	BiCMOS	TTLR/CMOS	Common	10	70	5	32		TC55B329-12	◊ Toshiba (3723)	40		
	14	CMOS						5	44		L7C156-14	◊ LogicDev	45	
	15	BiCMOS	TTL/CMOS	Common	10	170	5	32		TC55B329-15	◊ Toshiba (3723)	50		
									CXK59288-15	◊ Sony (3695)				
									VT62D932-15	◊ VLSI Tech				
									VT62D932L-15	◊ VLSI Tech				
									VT62932-15	◊ VLSI Tech				
									VT62932L-15	◊ VLSI Tech				
		TTL	Common	35	145	5	32		MT5C2889-15	◊ MicronTech				
	17	CMOS					5	28		TC55329-17	◊ Toshiba			
	19	CMOS					5	44		L7C156-19	◊ LogicDev			
										MK62486-19	◊ SGS-Thomson			
										MK62940-19	◊ SGS-Thomson			
	20	CMOS					5	32		IDT71259L-20	◊ IDT			
										IDT71259S-20	◊ IDT			
										IDT71559L-20	◊ IDT			
										IDT71559S-20	◊ IDT			
										IS61C259-20	◊ ISSI			
										IS61C259L-20	◊ ISSI			
(Continued)														

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◇ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx9	20	CMOS					5	32			(Cont'd)	
										MCM6205-20		
										◊ Motorola		
										CXK59288-20	◊ Sony	
										TC55329-20	◊ Toshiba	
										VT62D932-20	◊ VLSI Tech	5
										VT62D932L-20	◊ VLSI Tech	
										VT62932-20	◊ VLSI Tech	
										VT62932L-20	◊ VLSI Tech	
		TTL	Common		30	120	5	32		MT5C2889-20	MicronTech	
24	CMOS						5	44		L7C156-24	◊ LogicDev	
25	CMOS						5	32		MB8289-25	Fujitsu	10
										IDT71259L-25	◊ IDT	
										IDT71259S-25	◊ IDT	
										IDT71559L-25	◊ IDT	
										IDT71559S-25	◊ IDT	
										IS61C259-25	ISSI	15
										IS61C259L-25	ISSI	
										MCM6205-25		
										◊ Motorola		
								44		MK62486-25	◊ SGS-Thomson	
										MK62940-25	◊ SGS-Thomson	
								32		CXK59288-25	◊ Sony	20
										TC55329-25	◊ Toshiba	
										VT62D932-25	◊ VLSI Tech	
										VT62D932L-25	◊ VLSI Tech	
										VT62932-25	◊ VLSI Tech	25
										VT62932L-25	◊ VLSI Tech	
30	CMOS						5	32		IDT71259L-30	◊ IDT	
										IDT71259L-30B		
										† IDT		
										IDT71259S-30	◊ IDT	
										IDT71259S-30B		
										† IDT		
										IDT71559L-30	◊ IDT	30
										IDT71559L-30B		
										† IDT		
										IDT71559S-30	◊ IDT	
										IDT71559S-30B		
										† IDT		
35	CMOS						5	32		TC55329-35	◊ Toshiba	35
	CMOS						5	32		MB8289-35	Fujitsu	
										IDT71259L-35	◊ IDT	
										IDT71259L-35B		
										† IDT		
										IDT71259S-35	◊ IDT	
										IDT71259S-35B		
										† IDT		
										IDT71559L-35	◊ IDT	40
										IDT71559L-35B		
										† IDT		
										IDT71559S-35	◊ IDT	
										IDT71559S-35B		
										† IDT		
										IS61C259-35	ISSI	45
										IS61C259L-35	ISSI	
										LH52259-35	Sharp	
45	CMOS						5	32		IDT71259L-45	◊ IDT	
										IDT71259L-45B		
										† IDT		
										IDT71259S-45	◊ IDT	
										IDT71259S-45B		
										† IDT		
										IDT71559L-45	◊ IDT	50
										IDT71559L-45B		
										† IDT		
										IDT71559S-45	◊ IDT	
										IDT71559S-45B		
										† IDT		
										LH52259-45	Sharp	55
											(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
32Kx9	55	CMOS					5	32		IDT71259L-55B ‡ IDT IDT71259S-55B ‡ IDT IDT71559L-55 † IDT IDT71559S-55 † IDT	(Cont'd)	5
	70	CMOS					5	32		CXK59290-70L † Sony		
	100	CMOS					5	32		CXK59290-10L † Sony		
	120	CMOS					5	32		CXK59290-12L † Sony		
32Kx16	20	CMOS	TTL/CMOS	Common	1	130	5	40		TC55B1632-20 ‡ Toshiba		10
	25	CMOS	TTL/CMOS	Common	1	130	5	40		TC551632-25 † Toshiba		
	35	CMOS	TTL/CMOS	Common	1	130	5	40		TC551632-35 † Toshiba		
32Kx24	85	CMOS					5	66		PUMA25768-85 Mosaic Semi		15
	100	CMOS					5	66		PUMA25768-10 Mosaic Semi		
	120	CMOS					5	66		PUMA25768-12 Mosaic Semi		
	150	CMOS					5	66		PUMA25768-15 Mosaic Semi		
64Kx1	8	BICMOS					-4.5	22		IDT100490S8D ‡ IDT		20
							-5.2	22		IDT10490S8D IDT		
	10	BICMOS					-4.5	22		IDT100490 IDT		
							-5.2	22		IDT100490S10 IDT		
		CMOS					5	22		IDT10490S10 IDT		25
		TTL	Common	50	150		5	22		ATT7C187-10 † AT&T		
										MT6401-10 MicronTech		
	12	BICMOS					-4.5	22		IDT100490S12 IDT		
							-5.2	22		IDT10490S12 IDT		30
		CMOS					5	22		ATT7C187-12 † AT&T		
										MT5C6401		
										883C-12 † MicronTech		
										MCM6287-12		35
										‡ Motorola		
										P4C187-12C † Performance		
		TTL	Common	45	140		5	22		MT5C6401-12 MicronTech (3580)		
	15	BICMOS					-4.5	24		IDT100490 † IDT		40
								22		IDT100490S15 IDT		
										IDT100490S15D † IDT		
							-5.2	27		IDT10490 IDT		
		CMOS					5	22		TMS6787-15 TI		45
								24		ATT7C187-15 † AT&T		
										CY7C187A-15C Cypress		
								22		MB82B84-15 † Fujitsu		
ECL										IDT7187L-15 ‡ IDT		45
										IDT7187S-15 ‡ IDT		
										L7C187C-15 † LogicDev		
										MT5C6401		
										883C-15 † MicronTech		
										MCM6287-15 † Motorola		
ECL										MCM6287B-15 ‡ Motorola		45
										P4C187-15C † Performance		
										P4C187-15M † Performance		
										VT6287H-15 † VLSI Tech		
										VT6287HL-15 † VLSI Tech		
							-5.2	22		MBM10C490-15 † Fujitsu		
ECL										MBM100C490-15 † Fujitsu		45
							-4.5	22		MBM100C490-15 † Fujitsu		
							4.5	22		MBM100490-15 † Fujitsu		

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx1	15	ECL 10K					-5.2	22		IDT10490S-15B	(Cont'd)	
										† IDT		
	20	BICMOS					-4.5	22		IDT100490S20	IDT	
								24		IDT100490S20D	◊ IDT	
							5	22		TMS6787-20	TI	
		CMOS					5	22		ATT7C187-20	◊ AT&T	5
								24		CY7C187A-20C	Cypress	
										CY7C187A-20M	† Cypress	
										MB82B84-20	◊ Fujitsu	
								22		IDT7187L-20	◊* IDT	10
										IDT7187S-20	◊* IDT	
										L7C187C-20	◊ LogicDev	
										L7C187M-20	◊† LogicDev	
										MT5C6401		
										883C-20	† MicronTech	
										MCM6287-20	◊* Motorola	
										MCM6287B-20	◊* Motorola	15
										P4C187-20C	* Performance	
										P4C187-20M	*† Performance	
										VT6287H-20	◊ VLSI Tech	
										VT6287HL-20	◊ VLSI Tech	
		TTL	Common	40	120		5	22		MT5C6401-20	MicronTech	20
		ECL 10K					-5.2	22		IDT10490S-20B	† IDT	
	25	BICMOS					5	22		TMS6787-25	TI	
		CMOS					5	22		CY7C187-25C	Cypress	
								24		CY7C187A-25C	Cypress	
										CY7C187A-25M	† Cypress	25
								22		MB81C71A-25	◊ Fujitsu	
										HM6787	◊ Hitachi	
										IDT7187L-25	◊* IDT	
										IDT7187L-25B	◊*‡ IDT	
										IDT7187S-25	◊*‡ IDT	30
										IDT7187S-25B	◊*‡ IDT	
										L7C187C-25	◊ LogicDev	
										L7C187M-25	◊† LogicDev	
										S64KX1-035	Micro-C	
										MT5C6401		
										883C-25	† MicronTech	35
										MCM6287-25	◊* Motorola	
										F1600A	National	
										F1601A	National	
										P4C187-25C	* Performance	
										P4C187-25M	*† Performance	40
										P4C187L-25C	* Performance	
										P4C187L-25M	*† Performance	
										LH5261-25	Sharp	
										LH5263-25	Sharp	
								24		CXK5164-25	Sony	45
								22		VT6287H-25	◊ VLSI Tech	
										VT6287HL-25	◊ VLSI Tech	
		ECL					4.5	22		MBM100490-25	◊ Fujitsu	
							-5.2	22		MBM10490-25	◊ Fujitsu	
		TTL					5	22		MB81C71A	◊ Fujitsu	50
										MT5C6401-25	◊ MicronTech	
											(3580)	
28	CMOS						5	36		HC6464	◊‡ Honeywell	
30	BiCMOS						5	22		TMS6787-30	TI	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx1	30	CMOS					5	22		IDT7187L-30 ♦ IDT IDT7187L-30B ♦ IDT IDT7187S-30 ♦ IDT IDT7187S-30B ♦ IDT 1600A-30 † National 1601A-30 † National P4C187-30M *† Performance P4C187L-30M *† Performance		5
	35	CMOS					5	22 24		CY7C187-35C ♦ Cypress CY7C187A-35C Cypress CY7C187A-35M † Cypress		10
								22		EDI8164C35B ♦ EDI EDI8164P35B ♦ EDI MB81C71A-35 ♦ Fujitsu IDT7187L-35 ♦ IDT IDT7187L-35B ♦ IDT IDT7187S-35 ♦ IDT IDT7187S-35B ♦ IDT L7C187C-35 ♦ LogicDev L7C187M-35 † LogicDev S64KX1-045 Micro-C		15 20
										MT5C6401 883C-35 † MicronTech F1600AM † National F1601AM † National 1600A-35 † National 1601A-35 † National P4C187-35M *† Performance P4C187L-35M *† Performance IMS1600-35 SGS-Thomson LH5261-35 Sharp LH5263-35 Sharp TC5562-35 ♦ Toshiba VT6287H-35 ♦ VLSI Tech VT6287HL-35 ♦ VLSI Tech		25 30
		TTL	Common		30	100	5	22		MT5C6401-35 MicronTech (3580)		35
	40	CMOS					5	24		HS65643RH ‡ Harris (3528)		
		CMOS/SOS					5	22		MAS9187 GEC Plessey		
	45	CMOS					5	22 24		CY7C187-45C ♦ Cypress CY7C187A-45C Cypress CY7C187A-45M † Cypress		40
								22		EDI8164C45B ♦ EDI EDI8164P45B ♦ EDI HM6287-45 ♦ Hitachi IDT7187L-45 ♦ IDT IDT7187L-45B ♦ IDT IDT7187S-45 ♦ IDT IDT7187S-45B ♦ IDT L7C187C-45 ♦ LogicDev L7C187M-45 † LogicDev MT5C6401 883C-45 † MicronTech		45 50
										F1600A-45 National F1601-45 National 1600A-45 † National		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx1	45	CMOS					5	22		1601A-45 † National μPD4361-45 † NEC (3591) IMS1600-45 † SGS-Thomson IMS1600-45M † ‡ SGS-Thomson		
		TTL			30	100	5	22		6287-45 † Krueger		5
		SOI					5	24		HX6464/1SHZC † ‡ Honeywell		
								36		HX6464/1SHZC † ‡ Honeywell		
		TTL					5	36		HS6464 † ‡ Honeywell		
50		CMOS					5	24		M61064 ‡ AT&T		
55		CMOS					5	22		ED18164C55B † ‡ EDI		10
										ED18164P55B † ‡ EDI		
										HM6287-55 † Hitachi		
								24		HC6464/1SHCC † ‡ Honeywell		
								36		HC6464/1SHCC † ‡ Honeywell		
								22		IDT7187L-55B † ‡ IDT		15
										IDT7187S-55B † ‡ IDT		
										S64KX1-055 † Micro-C		
										MT5C6401 † MicronTech		
										883C-55 † ‡ MicronTech		
										F1600AM-55 † National		20
										1600A-55 † National		
										1601A-55 † National		
										μPD4361-55 † NEC (3591)		
										IMS1600-55 † SGS-Thomson		
										IMS1600-55M † ‡ SGS-Thomson		25
										IMS1601L-55M † ‡ SGS-Thomson		
70		CMOS					5	22		HM6287-70 † Hitachi		
										IDT7187L-70B † ‡ IDT		
										IDT7187S-70B † ‡ IDT		
								20		S16KX1-070 † Micro-C		
								22		S64KX1-070 † Micro-C		30
										MT5C6401 † MicronTech		
										883C-70 † ‡ MicronTech		
										1600A-70 † National		
										1601A-70 † National		
										μPD4361-70 † NEC (3591)		
										IMS1600-70M † ‡ SGS-Thomson		35
										TC5561-70 † Toshiba		
		TTL			30	100	5	22		6287-70 † Krueger		
85		CMOS					5	22		IDT7187L-85B † ‡ IDT		
										IDT7187S-85B † ‡ IDT		
										L7C187C-85 † LogicDev		40
										L7C187M-85 † ‡ LogicDev		
100		NMOS					5	16		MT4264-10/883C † ‡ MicronTech		
120		NMOS					5	16		MT4264-12/883C † ‡ MicronTech		
150		NMOS					5	16		MT4264-15/883C † ‡ MicronTech		
200		NMOS					5	16		MT4264-20/883C † ‡ MicronTech		45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose											(Cont'd)	
64Kx4	10	BiCMOS	TTL/CMOS	Common	10	140	5	24		TC55B464-10	Toshiba (3723)	
								28		TC55B465-10	Toshiba (3723)	
12	BiCMOS						5	28		CY7B153-12C	Cypress	5
										CY7B154-12C	Cypress	
										CY7B191-12C	Cypress	
										CY7B192-12C	Cypress	
								24		CY7B194-12C	Cypress	
										CY7B195-12C	Cypress	
										CY7B196-12C	Cypress	
								-5.2	28	SC5104-12	Silicon Conn	10
										TC55B464-12	Toshiba (3723)	
										ATT7C194-12	AT&T (3402)	
15	BiCMOS						5	28		ATT7C195-12	AT&T (3402)	
										ATT7C196-12	AT&T (3402)	
										ATT7C191-12	AT&T	15
										ATT7C192-12	AT&T	
										P4C1298-12	Performance	
										IDT10504S-12	IDT	
										IDT10506LL-12	IDT	
										IDT10506RL-12	IDT	20
										IDT10507S-12	IDT	
										IDT10508S-12	IDT	
20	ECL 10K						-4.5	32		IDT100504S-12	IDT	
										IDT100506LL-15	IDT	
										IDT100506RL-12	IDT	25
										IDT100507S-12	IDT	
										IDT100508S-12	IDT	
										CY7B153-15C	Cypress	
										CY7B153-15M †	Cypress	
										CY7B154-15C	Cypress	30
										CY7B154-15M †	Cypress	
										CY7B191-15C	Cypress	
35	15	BiCMOS					5	28		CY7B191-15M †	Cypress	
										CY7B192-15C	Cypress	
										CY7B192-15M †	Cypress	35
								24		CY7B194-15C	Cypress	
										CY7B194-15M †	Cypress	
										CY7B195-15C	Cypress	
										CY7B195-15M †	Cypress	
										CY7B196-15C	Cypress	40
										CY7B196-15M †	Cypress	
								-5.2	32	MBM10C504-15		
45	20	ECL 100K					5	24		MB82B84	Fujitsu	
										SC5104-15	Silicon Conn	
								-5.2	28	TC55B464-15	Toshiba (3723)	45
										MBM100C504-15		
										MBM101C504-15	Fujitsu	
										MBM101C504-15	Fujitsu	
										EDI2840C15C	EDI	
										EDI2841C15C	EDI	
										EDI2842C15C	EDI	50
										EDI2843C15C	EDI	
50	35	BiCMOS					5	28		MCM6208-15		
										MCM6209-15	Motorola	
										Q58828-15C	Quality Semi	
											(Continued)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	15	CMOS									(Cont'd)	
		CMOS/TTL										
		Common	10		160	5		24		ATT7C195-15 ♦ AT&T (3402)		
								28		ATT7C196-15 ♦ AT&T (3402)		
		Seperate	10		175	5		28	Transparent Write	ATT7C191-15 ♦ AT&T		
					160	5		28	Hi-Z Write	ATT7C192-15 ♦ AT&T		
		TTL	Common	30	140	5		24		MT5C2564-15 MicronTech		5
								28		MT5C2565-15 MicronTech		
					125	5		24		P4C1258-15C ♦ Performance		
								28		P4C1298-15C ♦ Performance		
		TTL/CMOS										
		Common	10		140	5		28		TC55B465-15 ♦ Toshiba (3723)		
		ECL					-5.2	22		MBM10490-15 ♦ Fujitsu		10
		ECL 10K					-5.2	32		IDT10504S-15 IDT		
										IDT10506LL IDT		
										IDT10506RL-15 IDT		
										IDT10507S-15 IDT		
										IDT10508S-15 IDT		15
								28		NM5104-15 ♦ National		
		ECL 100K					-4.5	32		IDT100504S-15 IDT		
										IDT100506RL-15 IDT		
										IDT100507S-15 IDT		
										IDT100508S-15 IDT		20
								28		NM100504-15 ♦ National		
		TTL					5	24		M5M5257B-15 ♦ Mitsubishi		
18		ECL 10K					-5.2	28		NM5104-18 ♦ National		
		ECL 100K					-4.5	28		NM100504-18 ♦ National		
20		BiCMOS					5	28		CY7B153-20C Cypress		25
										CY7B153-20M † Cypress		
										CY7B154-20C Cypress		
										CY7B154-20M † Cypress		
										CY7B191-20C Cypress		
										CY7B191-20M † Cypress		30
										CY7B192-20C Cypress		
										CY7B192-20M † Cypress		
								24		CY7B194-20C Cypress		
										CY7B194-20M † Cypress		
										CY7B195-20C Cypress		35
										CY7B195-20M † Cypress		
										CY7B196-20C Cypress		
										CY7B196-20M † Cypress		
										TMS6708-20 TI		
		CMOS					5	28		IDT61298L-20 IDT		40
										IDT61298S-20 IDT		
								24		MT5C2564		
										883C-20 ♦† MicronTech		
								28		MT5C2565		
										883C-20 ♦† MicronTech		
								24		MCM6208-20		
										♦* Motorola		
								28		MCM6209-20		
										♦* Motorola		45
										PDM41251L-20		
										♦ Paradigm		
										PDM41251S-20		
										♦ Paradigm		
										PDM41252L-20		
										♦ Paradigm		
										PDM41252S-20		
										♦ Paradigm		
								24		PDM41258L-20		
										♦ Paradigm		50
										PDM41258L-45		
										♦ Paradigm		
										PDM41258S-20		
										♦ Paradigm		
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	20	CMOS					5	28		PDM41298L-20 ◊ Paradigm PDM41298L-35 ◊ Paradigm PDM41298L-45 ◊ Paradigm PDM41298L-55B ◊† Paradigm PDM41298S-20 ◊ Paradigm PDM41298S-45 ◊ Paradigm P4C1256-20C ◊ Performance P4C1256L-20C ◊ Performance	(Cont'd)	5
								24		P4C1258-20C ◊ Performance P4C1258L-20C ◊ Performance		10
								28		P4C1281-20C ◊ Performance P4C1281L-20C ◊ Performance P4C1282-20C ◊ Performance P4C1282L-20C ◊ Performance P4C1298-20C ◊ Performance P4C1298L-20C ◊ Performance P4C1299-20C ◊ Performance P4C1299L-20C ◊ Performance		15
								24		QS8828-20C ◊ Quality Semi QS8828-20M ◊ Quality Semi		20
										TC55464-20 ◊ Toshiba		
								28		TC55465-20 ◊ Toshiba		
		CMOS/TTL										
			Common		10	125	5	24		ATT7C194-20 ◊ AT&T (3401) ATT7C195-20 ◊ AT&T (3402) ATT7C196-20 ◊ AT&T (3403)		25
			Seperate		10	175	5	28	Transparent Write	ATT7C191-20 ◊ AT&T ATT7C192-20 ◊ AT&T		
						125	5	28	Hi-Z Write			
		TTL	Common		30	105	5	24		MT5C2564-20 MicronTech (3580) MT5C2565-20 MicronTech (3581)		
								28				
		TTL					5	24		M5M5257B-20 ◊ Mitsubishi		30
25		BICMOS					5	24		TMS6708-25 TI CY7C191-25C ◊ Cypress CY7C192-25C ◊ Cypress		
		CMOS					5	28				
								24		CY7C194-25C ◊* Cypress CY7C195-25C Cypress		35
								28		CY7C196-25C ◊* Cypress		
								32		EDI2841C25C EDI		
								28		EDI2840C25C EDI EDI2842C25C EDI		
								32		EDI2843C25C EDI		40
								28		EDI8466C25B † EDI (3463) EDI8466C25C EDI (3463)		
								24		MB81C84A-25 Fujitsu		
								32		HS-65758RH Harris HS65758RH Harris		45
								28		IDT61298L-25 ◊† IDT IDT61298L-25B † IDT IDT61298S-25 ◊† IDT IDT61298S-25B † IDT IDT7MP456-25 ◊† IDT	(Continued)	50

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	25	CMOS					5	24		IDT71258L-25 ◊‡ IDT IDT71258S-25 ◊‡ IDT	(Cont'd)	
								28		IDT71281L-25 ◊‡ IDT IDT71281S-25 ◊‡ IDT IDT71282L-25 ◊‡ IDT IDT71282S-25 ◊‡ IDT		5
								24		MT5C2564		
								28		883C-25 ◊† MicronTech MT5C2565		
								24		883C-25 ◊† MicronTech MS62252A ◊ Mosel MCM6208-25 * Motorola		10
								28		MCM6209-25 ◊* Motorola		
										PDM41251L-25 ◊ Paradigm		
										PDM41251L-25B ◊† Paradigm		
										PDM41251S-25 ◊ Paradigm		
										PDM41251S-25B ◊† Paradigm		15
										PDM41252L-25 ◊ Paradigm		
										PDM41252L-25B ◊† Paradigm		
										PDM41252S-25 ◊ Paradigm		
										PDM41252S-25B ◊† Paradigm		
								24		PDM41258L-25 ◊ Paradigm PDM41258L-25B ◊† Paradigm PDM41258S-25 ◊ Paradigm PDM41258S-25B ◊† Paradigm		20
								28		PDM41298L-25 ◊ Paradigm PDM41298L-25B ◊† Paradigm PDM41298S-25 ◊ Paradigm PDM41298S-25B ◊† Paradigm P4C1256-25C ◊ Performance P4C1256-25M ◊† Performance P4C1256L-25C ◊ Performance P4C1256L-25M ◊† Performance		25
												30
								24		P4C1258-25C ◊ Performance P4C1258-25M ◊† Performance P4C1258L-25C ◊ Performance P4C1258L-25M ◊† Performance		35
								28		P4C1281-25C ◊ Performance P4C1281-25M ◊† Performance P4C1281L-25C ◊ Performance P4C1281L-25M ◊† Performance P4C1282-25C ◊ Performance P4C1282L-25C ◊ Performance		40

MEMORY

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—General Purpose										(Cont'd)			
64Kx4	25	CMOS					5	28		P4C1298-25C P4C1298-25M P4C1298L-25C P4C1298L-25M P4C1299-25C P4C1299-25M P4C1299L-25C P4C1299L-25M	Performance Performance Performance Performance Performance Performance Performance Performance	5	

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	35	CMOS				5	28				(Cont'd)	
										CY7C192-35C ♦ Cypress CY7C192-35M ♦† Cypress		
							24			CY7C194-35C ♦* Cypress CY7C194-35M ♦*† Cypress CY7C195-35C Cypress CY7C195-35M † Cypress		5
							28			CY7C196-35C ♦* Cypress CY7C196-35M ♦† Cypress		
							24			EDH84H64C-35C EDI EDH84H64C-35MHR † EDI ED18464C35B ♦† EDI (3466)		10
							28			ED18464L35B † EDI ED18464P35B † EDI		
							24			ED18465C35B ♦† EDI (3463, 3466) ED18465P35B ♦† EDI		15
							28			ED18466C35B † EDI (3463) ED18466C35C EDI (3463)		
							24			MB81C84A-35 Fujitsu		
							28			IDT61298L-35 ♦‡ IDT IDT61298L-35B † IDT IDT61298S-35 ♦‡ IDT IDT61298S-35B † IDT		20
							24			IDT71258L-35 * IDT IDT71258S-35 * IDT		
							28			IDT71281L-35 ♦‡ IDT IDT71281S-35 ♦‡ IDT IDT71282L-35 ♦‡ IDT IDT71282S-35 ♦‡ IDT		25
							24			MT5C2564 883C-35 ♦† MicronTech MT5C2565 883C-35 ♦† MicronTech		30
							28			MSM464-35 Mosaic Semi MCM6208-35 * Motorola μPD43254-35 NEC		
							24			PDM41251L-35 ♦ Paradigm PDM41251L-35B ♦† Paradigm PDM41251S-35 ♦ Paradigm PDM41251S-35B ♦† Paradigm PDM41252L-35 ♦ Paradigm PDM41252L-35B ♦† Paradigm PDM41252S-35 ♦ Paradigm PDM41252S-35B ♦† Paradigm (Continued)		35
							28					40

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	35	CMOS					5	24		PDM41258L-35 PDM41258L-35B PDM41258S-35 PDM41258S-35B	Paradigm Paradigm Paradigm Paradigm	(Cont'd)
								28		PDM41298L-35B PDM41298S-35 PDM41298S-35B P4C1256-35C P4C1256-35M P4C1256L-35C P4C1256L-35M	Paradigm Paradigm Paradigm Performance Performance Performance Performance	5
								24		P4C1258-35C P4C1258-35M P4C1258L-35C P4C1258L-35M	Performance Performance Performance Performance	10
								28		P4C1281-35C P4C1281-35M P4C1281L-35C P4C1281L-35M P4C1282-35C P4C1282-35M P4C1282L-35C P4C1282L-35M P4C1298-35C P4C1298-35M P4C1298L-35C P4C1298L-35M P4C1299-35C P4C1299-35M P4C1299L-35C P4C1299L-35M	Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance Performance	15
								24		QS8828-35M LH52252-35 LH52255-35 TC55464-35	Quality Semi Sharp (3623) Sharp Toshiba	35
								28		TC55465-35	Toshiba	40
								24		VT6208-35 VT6208H-35 VT6208HL-35 VT6208L-35	VLSI Tech VLSI Tech VLSI Tech VLSI Tech	40
			TTL	Common	25	90	5	24		MT5C2564-35 MT5C2565-35	MicronTech (3580) MicronTech (3581)	45
								28		MB81C84A KM64257-35 KM64257L-35	Fujitsu Samsung Samsung	45
			TTL				5	24		CY7C191-45C CY7C191-45M CY7C192-45C CY7C192-45M	Cypress Cypress Cypress Cypress	
45	CMOS						5	28			(Continued)	

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ♦ Available in Surface Mount Package
Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Tech-nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	45	CMOS					5	24		CY7C194-45C ◊* Cypress CY7C194-45M ◊*† Cypress CY7C195-45C Cypress CY7C195-45M † Cypress	(Cont'd)	5
										CY7C196-45C ◊* Cypress CY7C196-45M ◊*† Cypress		
										EDH84H64C-45C EDI EDH84H64C-45MHR † EDI EDI8464C45B ◊† EDI (3466)		
										EDI8464L45B † EDI EDI8464P45B † EDI		
										EDI8465C45B ◊† EDI (3463, 3466) EDI8465P45B ◊† EDI		
										EDI8466C45B † EDI (3463) EDI8466C45C EDI (3463)		
										MB81C84A-45 Fujitsu IDT61298L-45 ◊‡ IDT IDT61298L-45B ◊‡ IDT IDT61298S-45 ◊‡ IDT IDT61298S-45B ◊‡ IDT		
										IDT71258L-45 * IDT IDT71258L-45B *† IDT IDT71258S-45 * IDT IDT71258S-45B *† IDT		
										IDT71281L-45 ◊‡ IDT IDT71281L-45B ◊‡ IDT IDT71281S-45 ◊‡ IDT IDT71281S-45B ◊‡ IDT IDT71282L-45 ◊‡ IDT IDT71282L-45B ◊‡ IDT IDT71282S-45 ◊‡ IDT IDT71282S-45B ◊‡ IDT		
										S64KX4-045 Micro-C MT5C2564 883C-45 ◊† MicronTech		
										MT5C2565 883C-45 ◊† MicronTech MSM464-45 Mosaic Semi μPD43254-45 NEC		
										PDM41251L-45 ◊ Paradigm PDM41251L-45B ◊† Paradigm PDM41251S-45 ◊ Paradigm PDM41251S-45B ◊† Paradigm PDM41252L-45 ◊ Paradigm		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	45	CMOS					5	28		PDM41252L-45B ‡† Paradigm PDM41252S-45 ‡ Paradigm PDM41252S-45B ‡† Paradigm	(Cont'd)	
								24		PDM41258L-45B ‡† Paradigm PDM41258S-45 ‡ Paradigm PDM41258S-45B ‡† Paradigm		5
								28		PDM41298L-45B ‡† Paradigm PDM41298S-45B ‡† Paradigm P4C1256-45M ‡† Performance P4C1256L-45M ‡† Performance		10
								24		P4C1258-45M ‡† Performance P4C1258L-45M ‡† Performance		
								28		P4C1281-45M ‡† Performance P4C1281L-45M ‡† Performance P4C1282-45M ‡† Performance P4C1282L-45M ‡† Performance P4C1298-45M ‡† Performance P4C1298L-45M ‡† Performance P4C1299-45M ‡† Performance P4C1299L-45M ‡† Performance		15
								24		LH52252-45 Sharp (3623) LH52255-45 Sharp VT6208-45 VLSI Tech VT6208L-45 VLSI Tech		20
		TTL	Common		25	90	5	24		MT5C2564-45 MicronTech (3580)		25
								28		MT5C2565-45 MicronTech (3581)		
		TTL					5	28		KM64257-45 Samsung KM64257L-45 Samsung		
55	CMOS						5	24		EDH84H64C-55C EDI EDH84H64C-55MHR ‡ EDI ED18464C55B ‡† EDI (3466)		30
								28		ED18464P55B ‡ EDI		
								24		ED18465C55B ‡† EDI (3463, 3466) ED18465P55B ‡† EDI		
								28		ED18466C55B ‡ EDI (3463) ED18466C55C EDI (3463) IDT61298L-55 ‡‡ IDT IDT61298L-55B ‡‡ IDT IDT61298S-55 ‡‡ IDT IDT61298S-55B ‡‡ IDT		35
										(Continued)		40

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	55	CMOS					5	24		IDT71258L-55 * IDT IDT71258L-55B *† IDT IDT71258S-55 * IDT IDT71258S-55B *† IDT	(Cont'd)	
								28		IDT71281L-55 *‡ IDT IDT71281L-55B *‡ IDT IDT71281S-55 *‡ IDT IDT71281S-55B *‡ IDT IDT71282L-55 *‡ IDT IDT71282L-55B *‡ IDT IDT71282S-55 *‡ IDT IDT71282S-55B *‡ IDT		5
								24		MT5C2564 883C-55 *† MicronTech		
								28		MT5C2565 883C-55 *† MicronTech		
								24		MSM464-55 Mosaic Semi μPD43254-55 NEC		15
								28		PDM41251L-55B *† Paradigm PDM41251S-55B *† Paradigm PDM41252L-55B *† Paradigm PDM41252S-55B *† Paradigm		20
								24		PDM41258L-55B *† Paradigm PDM41258S-55B *† Paradigm		
								28		PDM41298S-55B *† Paradigm P4C1256-55M *† Performance P4C1256L-55M *† Performance		25
								24		P4C1258-55M *† Performance P4C1258L-55M *† Performance		
								28		P4C1281-55M *† Performance P4C1281L-55M *† Performance P4C1282-55M *† Performance P4C1282L-55M *† Performance P4C1298-55M *† Performance P4C1298L-55M *† Performance P4C1299-55M *† Performance P4C1299L-55M *† Performance		30
								24		LH52252-55 Sharp (3623)	(Continued)	35

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx4	70	CMOS					5	32		EDH84H64C-70MHR † EDI	(Cont'd)	5
								28	IDT61298L-70B ‡ IDT			
									IDT61298S-70B ‡ IDT			
	24								IDT71258L-70B *† IDT			
									IDT71258S-70B *† IDT			
	28								IDT71281L-70B ‡ IDT			
									IDT71281S-70B ‡ IDT			
									IDT71282L-70B ‡ IDT			
									IDT71282S-70B ‡ IDT			
	24								MT5C2564 883C-70 ‡ MicronTech		10	
									MT5C2565 883C-70 ‡ MicronTech			
100	NMOS						5	18	MT4067-10/883C ‡ MicronTech (3579)		15	
120	NMOS						5	18	MT4067-12/883C ‡ MicronTech (3579)			
150	NMOS						5	18	MT4067-15/883C ‡ MicronTech (3579)			
200	NMOS						5	18	MT4067-20/883C ‡ MicronTech (3579)			
64Kx8	25	CMOS					5	40	IDT7M812-25 ‡ IDT		20	
	35	CMOS					5	40	IDT7M812-35 ‡ IDT			
	40	CMOS					5	40	IDT7MP6025-40 ‡ IDT			
	45	CMOS					5	40	IDT7M812-45 ‡ IDT			
	60	CMOS					5	32	ED18M864C60C † EDI (3466)			
	70	CMOS					5	32	ED18M864C70B † EDI (3466)			
									ED18M864C70C † EDI (3466)			
	80	CMOS					5	32	ED18M864C80B † EDI (3466)			
	90	CMOS					5	32	ED18M864C90B † EDI (3466)			
									ED18M864C90C † EDI (3466)		25	
	100	CMOS					5	32	ED18M864C100B † EDI (3466)			
									ED18M864C100C † EDI (3466)			
120	CMOS					5	32	ED18M864C120B † EDI (3466)				
								ED18M864C120C † EDI (3466)				
150	CMOS					5	32	ED18M864C150B † EDI (3466)			30	
								ED18M864C150C † EDI (3466)				
								40	MBM27C1024 ‡ Fujitsu			
								28	MBM27C512 ‡ Fujitsu			
	180	CMOS Module					5	48	HM91M2-9 Harris			
64Kx9	17	CMOS					5	24	TC55464-17 ‡ Toshiba TC55465-17 ‡ Toshiba		35	
	25	CMOS					5	40	IDT7M912-25 ‡ IDT			
	35	CMOS					5	40	IDT7M912-35 ‡ IDT			
	45	CMOS					5	40	IDT7M912-45 ‡ IDT			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
64Kx16	15	CMOS					5	44		TC551664-15	◊ Toshiba (3722)	5
	20	CMOS					5	44		TC551664-20	◊ Toshiba (3722)	
		CMOS/TTL										
			Common		0.5	200	5	44		ATT7C342-20	◊ AT&T	
	25	CMOS					5	40		IDT7M624S-25	◊ IDT	
								44		TC551664-25	◊ Toshiba (3722)	10
	35	CMOS					5	40		EDH816H64C-35C	EDI	
										EDH816H64C-35MHR	† EDI	
										IDT7M624S-35	◊ IDT	
	45	CMOS					5	40		EDH816H64C-45C	EDI	
60										EDH816H64C-45MHR	† EDI	15
	55	CMOS					5	40		EDH816H64C-55C	EDI	
										EDH816H64C-55MHR	† EDI	
										S64K16-55CC	Inova	
										S64K16-55IC	Inova	
										S64K16L-55CC	Inova	20
										S64K16L-55IC	Inova	
	60	CMOS					5	40		ED18M1664C60C	EDI (3466)	
	70	CMOS					5	40		EDH816H64C-70C	EDI	
										EDH816H64C-70MHR	† EDI	
85										ED18M1664C70B	† EDI (3466)	25
										ED18M1664C70C	EDI (3466)	
										S64K16-70CC	Inova	
										S64K16-70IC	Inova	
										S64K16-70MC	† Inova	
										S64K16L-70CC	Inova	30
										S64K16L-70IC	Inova	
										S64K16L-70MC	† Inova	
										ED18M1664C85B	† EDI (3466)	
										ED18M1664C85C	EDI (3466)	
100										S64K16-85CC	Inova	35
										S64K16-85IC	Inova	
										S64K16-85MC	† Inova	
										S64K16L-85CC	Inova	
										S64K16L-85IC	Inova	
										S64K16L-85MC	† Inova	40
										ED18M1664C100B	† EDI (3466)	
										ED18M1664C100C	EDI (3466)	
										S64K16-100CC	Inova	
										S64K16-100IC	Inova	
120										S64K16-100MC	† Inova	45
										S64K16L-100CC	Inova	
										S64K16L-100IC	Inova	
										S64K16L-100MC	† Inova	
										S64K16-120IC	Inova	50
										S64K16-120MC	† Inova	
										S64K16L-120IC	Inova	
										S64K16L-120MC	† Inova	
	150	CMOS					5	48		HM91M2	† Harris	
	200	CMOS					5	40		CAT27C210-20	Catalyst Semi (3425)	
	250	CMOS					5	40		CAT27C210-25	Catalyst Semi	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—General Purpose										(Cont'd)			
64Kx18	15	CMOS	CMOS/TTL Common	1	300	5	52			EDI2018XC15C	EDI		
	20	CMOS					44			ATT7C343-20	AT&T		
	25	CMOS					52			EDI2018XC25C	EDI		
128Kx8	10	CMOS	TTL/CMOS Common	0.03	80	5	32			ATT7C340	AT&T	5	
										TC551001A-10	Toshiba		
	15	CMOS	CMOS/TTL Common	30	270	5	32			V63C83-15	Vitellic		
										ATT7C108-15	AT&T (3394)		
									ATT7C109-15	AT&T (3394)			
	20	CMOS				5	32			MT5C1008			
										883C-20	† MicronTech		
										MT5C1009			
										883C-20	† MicronTech	10	
										MS621008	† Mose!		
										V63C83-20	Vitellic		
								32		VT62A8128-20	VLSI Tech		
			CMOS/TTL										
			Common	30	270	5	32			ATT7C108-20	AT&T (3394)		
					225	5	32			ATT7C109-20	AT&T (3394)	15	
			TTL	Common	35	140	5			MT5C1009-20	MicronTech (3581)		
				Common	30	120	5	32		MT5C1008-20	MicronTech		
	25	CMOS				5	32			CY7C108-25C	Cypress		
										CY7C109-25C	Cypress		
								42					20
								32			DPS1024-25	† Dense-Pac	
										ED188130L25B	† EDI (3465)		
										ED188130L35B	† EDI (3465)		
										FS128K8T-25CC	Inova		
										MT5C1008-25	† MicronTech (3581)		
										MT5C1008			
										883C-25	† MicronTech	25	
										MT5C1009			
										883C-25	† MicronTech		
										V63C83-25	Vitellic		
			CMOS/TTL										
			Common	30	160	5	32			ATT7C108-25	AT&T (3394)		
										ATT7C109-25	AT&T (3394)		
			TTL	Common	30	125	5	28		MT5C1009-25	MicronTech (3581)	30	
35	CMOS					5	32			CY7C108-35C	Cypress		
										CY7C108-35M	† Cypress		
										CY7C109-35C	Cypress		
										CY7C109-35M	† Cypress		
										DPS128M8AF-35	Dense-Pac (3449)	35	
										DPS128M8AG-35	Dense-Pac (3449)		
										DPS128M8AK-35	Dense-Pac (3449)		
										DPS128M8AN-35	Dense-Pac (3449)		
										ED188128L35C	EDI (3465)		
										FS128K8T-35CC	Inova	40	
										FS128K8T-35IC	Inova		
										FS128K8T-35MC	† Inova		
										IS61C1024L-20	ISSI		
										IS61C1024S-20	ISSI		
										MT5C1008			
										883C-35	† MicronTech	45	
										MT5C1009			
										883C-35	† MicronTech		
										MT5C1009			
										883C-45	† MicronTech		
										MT5C1009			
										883C-55	† MicronTech		
										MT5C1009			
										883C-70	† MicronTech		
(Continued)													

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
128Kx8	35	CMOS	TTL	Common	30	120	5	32		MT5C1008-35	MicronTech (3581)	
						115	5	28		MT5C1009-35	MicronTech (3581)	
	45	CMOS					5	32		CY7C108-45C	Cypress	5
										CY7C108-45M †	Cypress	
										CY7C109-45C	Cypress	
										CY7C109-45M †	Cypress	
										DPS128M8AF-45 †	Dense-Pac (3449)	10
										DPS128M8AG-45 †	Dense-Pac (3449)	
										DPS128M8AK-45 †	Dense-Pac (3449)	
										DPS128M8AN-45 †	Dense-Pac (3449)	
	64									FS128K8T-45CC	Inova	
										FS128K8T-45IC	Inova	
	32									FS128K8T-45MC	Inova	
										† Inova		
	64									IDT7M824S-45	† IDT	15
										IDT71024L-45	† IDT	
										IDT71024S-45	† IDT	
										IS61C1024L-25	ISSI	
	32									IS61C1024S-25	ISSI	
	50	CMOS								MT5C1008		20
										883C-45	† MicronTech	
	55	CMOS								MT5C1008-45	MicronTech	25
										IDT8MP824-50	† IDT	
										DPS128M8AF-55 †	Dense-Pac (3449)	
										DPS128M8AG-55 †	Dense-Pac (3449)	
										DPS128M8AN-55 †	Dense-Pac (3449)	
										DPS128M8AK-70 †	Dense-Pac (3449)	
										DPS128M8AN-55 †	Dense-Pac (3449)	
										EDI88128L55C	EDI (3465)	
										S128K8-55CC	Inova	
										S128K8-55IC	Inova	
	64									S128K8-55MC †	Inova	30
										S128K8L-55CC	Inova	
	32									S128K8L-55IC	Inova	35
										S128K8L-55MC	† Inova	
	64									S128K8T-55CC	Inova	
										S128K8T-55IC	Inova	
	32									S128K8TL-55CC	Inova	
										S128K8TL-55IC	Inova	
	64									IDT7M824S-55	† IDT	40
										IDT71024L-55	† IDT	
										IDT71024L-55B	† IDT	
										IDT71024S-55	† IDT	
	60	CMOS								IDT71024S-55B	† IDT	
										IS61C1024L-35	ISSI	
	30									IS61C1024S-35	ISSI	
										MT5C1008		
	60									883C-55	† MicronTech	45
										EDI88128C60C	EDI (3466)	
	30									IDT8MP824-60	† IDT	
	60											

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
128Kx8	70	CMOS				5	32			(Cont'd)		
										DPS128M8AF-70 † Dense-Pac (3449)		
										DPS128M8AG-70 † Dense-Pac (3449)		
										DPS128M8AH-70 † Dense-Pac (3449)		
										ED18M8128C70B † EDI (3466)		5
										ED18M8128C70C EDI (3466)		
										ED188128C70B † EDI (3463, 3465)		
										ED188128L70B † EDI (3465)		
										ED188128P70B † EDI (3465)		
										ED188130C70B † EDI (3463, 3465)		
										ED188130P70B † EDI (3465)		10
								28		MB841000 † Fujitsu		
								32		S128K8-70CC Inova		
										S128K8-70IC Inova		
										S128K8-70MC † Inova		15
										S128K8L-70CC Inova		
										S128K8L-70IC Inova		
										S128K8L-70MC † Inova		
										S128K8T-70CC Inova		
										S128K8T-70IC Inova		
										S128K8T-70MC † Inova		20
										S128K8TL-70CC Inova		
										S128K8TL-70IC Inova		
										S128K8TL-70MC † Inova		
										IDT71024L-70 † IDT		
										IDT71024L-70B † IDT		25
										IDT71024S-70 † IDT		
										IDT71024S-70B † IDT		
										IS62C1024L-70 ISSI		
										IS62C1024S-70 ISSI		
										MT5C1008		
										883C-70 † MicronTech		30
										BR621024 ROHM		
								28		SRM20100L-70 S-MOS (3693)		
								32		KM681000 † Samsung		
										CXX581001-70LL † Sony (3697)		
										TC551001A-70 † Toshiba		35
										μPD431000-70 † NEC (3592)		
										UM621024-70 † UMC		
										ED18M8128C80B † EDI (3466)		40
										ED18M8128C80C EDI (3466)		
										MB841000-80 † Fujitsu		
										MB841000-80L † Fujitsu		
										DPS128M8-85 † Dense-Pac (3449)		
										ED188128C85B † EDI (3463, 3465)		
										ED188128P85B † EDI (3465)		
										ED188130C85B † EDI (3463, 3465)		45
										ED188130P85B † EDI (3465)		
										S128K8-85CC Inova		
										S128K8-85IC Inova		
										S128K8-85MC † Inova		
										S128K8L-85CC Inova		50
										S128K8L-85IC Inova		
										S128K8L-85MC † Inova		
										S128K8T-85CC Inova		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
128Kx8	85	CMOS					5	32			(Cont'd)	
										S128K8T-85IC S128K8T-85MC † Inova S128K8TL-85CC Inova S128K8TL-85IC Inova S128K8TL-85MC † Inova IS62C1024L-85 ISSI IS62C1024S-85 ISSI		5
								28		SRM20100L-85 S-MOS (3693)		
								32		CXK581001-85LL ◊ Sony (3697) TMS62828-85 TI TMS62828L-85 TI		10
		TTL/CMOS										
		Common			0.03	80	5	32		TC551001A-85 Toshiba		
					100uA	70	5	32		μPD431000-85 ◊ NEC (3592)		
		CMOSS					5	32		UM621024-85 ◊ UMC		15
		Mix MOS					5	32		TC551001-85 Toshiba		
90		CMOS					5	32		ED18M8128C90B † EDI (3466) ED18M8128C90C EDI (3466) ED18M8128P90B † EDI ED18M8128P90C EDI IDT71024L-90B ◊‡ IDT IDT71024S-90B ◊‡ IDT		20
100		CMOS					5	32		DPS128M8-100 ◊ Dense-Pac (3449) ED18M8128C100B † EDI (3466) ED18M8128C100C EDI (3466) ED18M8128P100B † EDI ED18M8128P100C EDI ED188128C100B ◊‡ EDI (3463, 3465) ED188128L100B EDI (3465) ED188128P100B ◊‡ EDI (3465) ED188130C100B ◊‡ EDI (3463, 3465) ED188130P100B ◊‡ EDI (3465) MB841000-10 ◊ Fujitsu MB841000-10L ◊ Fujitsu HM658128-10 ◊ Hitachi S128K8-100CC Inova S128K8-100IC Inova S128K8-100MC † Inova S128K8L-100CC Inova S128K8L-100IC Inova S128K8L-100MC † Inova S128K8T-100CC Inova S128K8T-100IC Inova S128K8T-100MC † Inova S128K8TL-100CC Inova S128K8TL-100MC † Inova IS62C1024L-100 ISSI IS62C1024S-100 ISSI		25
										658128-10 ◊ Krueger (3548)		30
										BPS41288P ROHM		50
										(Continued)		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—General Purpose										(Cont'd)			
128Kx8	100	CMOS					5	28 32		(Cont'd)			
										SRM20100L-100 S-MOS (3693)			
										CXK581000-10L Sony (3696)			
										TMS62828-10 TI			
										TMS62828L-10 TI			
										UM621024-10 UMC			
										TTL/CMOS			
										Common	100uA	70uA	
										5	32	μPD431000-100 NEC (3592)	
										Mix MOS	5	32	TC551001-10 Toshiba
										NVRAM	5	32	DS1245-100 Dallas
120	CMOS						5	32		DPS128M8-120 Dense-Pac (3449)			
										ED18M8128C120B † EDI (3466)			
										ED18M8128C120C EDI (3466)			
										ED18M8128P120B			
										† EDI			
										ED18M8128P120C			
										EDI			
										ED188128C120B			
										† EDI (3463, 3465)			
										ED188128P120B			
										† EDI (3465)			
										ED188130C120B † EDI (3463, 3465)			
										ED188130P120B			
										† EDI (3465)			
										MB841000-12 Fujitsu			
										MB841000-12L			
										Fujitsu			
										HM658128-12 Hitachi			
										S128K8-120IC Inova			
										S128K8-120MC			
										† Inova			
										S128K8L-120IC Inova			
										S128K8L-120MC			
										† Inova			
										S128K8T-120IC Inova			
										S128K8T-120MC			
										† Inova			
										S128K8TL-120IC Inova			
										S128K8TL-120MC			
										† Inova			
										CXK581000-12L Sony (3696)			
										TMS62828-12 TI			
										TMS62828L-12 TI			
C8M128 † White Tech													
WS128K8-120 White Tech													
DS1245-120 Dallas													
150	CMOS						5	32		DPS128M8-150 † Dense-Pac (3449)			
										ED18M8128C150B † EDI (3466)			
										ED18M8128C150C EDI (3466)			
170	CMOS						5	32		ED18M8128P150B			
										† EDI			
										ED18M8128P150C			
										EDI			
										MBM27C1001 Fujitsu			
										MH12808TNA-15			
										Mitsubishi			
										CXK581000-15L Sony (3696)			
										DPS128M8-170 † Dense-Pac (3449)			
										HM91M2-8 † Harris			
										DPS128M8-200 † Dense-Pac (3449)			
180	CMOS						5	48		X28C010 † Xicor			
200	CMOS						5	32		ATT7C341 AT&T			
										CXK77910-17 Sony (3702)			
										MT5C1189-17 MicronTech			
128Kx9	10	CMOS					5	32		VT62A9128-20 VLSI Tech			
										(Continued)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
128Kx9	20	CMOS	TTL	Common	35	140	5	32		MT5C1189-20	MicronTech	(Cont'd)
	25	CMOS	TTL	Common	30	125	5	32		MT5C1189-25	MicronTech	
128Kx24	35	CMOS					5	66		DPS128X24AV3-35	Dense-Pac	5
	45	CMOS					5	66		DPS128X24AV3-45	Dense-Pac	
	55	CMOS					5	66		DPS128X24AV3-55	Dense-Pac	
	70	CMOS					5	66		DPS128X24AV3-70	Dense-Pac	
128Kx32	120	CMOS					5	76		M4194	White Tech	
256Kx1	12	BiCMOS					5	28		CY7B163-12C	Cypress	10
								24		CY7B193-12C	Cypress	
							-5.2	24		SC5100-12	◊ Silicon Conn	
		CMOS	CMOS/TTL	Seperate	10	175	5	24		ATT7C197-12	◊ AT&T	
15		BiCMOS					5	28		CY7B163-15C	Cypress	15
								24		CY7B163-15M †	Cypress	
										CY7B193-15C	Cypress	
										CY7B193-15M †	Cypress	
										CY7B197-15C	Cypress	
										CY7B197-15M †	Cypress	
							-5.2	24		MBM10C500-15	◊ Fujitsu	
							-4.5	24		MBM100C500-15	◊ Fujitsu	20
							-5.2	24		MBM101C500-15	◊ Fujitsu	
							5	24		MB82B81	◊ Fujitsu	
										MB82B81-15	Fujitsu	
							-4.5	24		μPD100500-15	NEC (3592)	25
							-5.2	24		μPD10500-15	NEC	
										SC5100-15	◊ Silicon Conn	
		CMOS					5	24		MCM6207-15	◊* Motorola	
		CMOS/TTL										
			Seperate	10	160	5	24			ATT7C197-15	◊ AT&T	
		TTL	Common	30	140	5	24			MT5C2561-15	MicronTech	
		ECL 10K					-5.2	24		NM5100-15	◊ National	30
		ECL 100K					-4.5	24		NM100500-15	◊ National	
		TTL					5	24		M5M5257B-15	◊ Mitsubishi	
18		ECL 10K					-5.2	24		NM5100-18	◊ National	35
							-4.5	24		NM100500-18	◊ National	
20		BiCMOS					5	28		CY7B163-20C	Cypress	40
								24		CY7B163-20M †	Cypress	
										CY7B193-20C	Cypress	
										CY7B193-20M †	Cypress	
										CY7B197-20C	Cypress	
										CY7B197-20M †	Cypress	
										MB82B81-20	Fujitsu	
							-4.5	24		μPD100500-20	NEC (3592)	45
							-5.2	24		μPD10500-20	NEC	
							5	24		μPD46251-20	◊ NEC (3592)	
										TMS6707-20	TI	
		CMOS					5	24		MT5C2561		
										883C-20	◊† MicronTech	
										MCM6207-20	◊* Motorola	
										PDM41257L-20	◊ Paradigm	
										PDM41257S-20	◊ Paradigm	
										PDM41257S-458	◊† Paradigm	50
										P4C1257-20C	◊ Performance	
										P4C1257L-20C	◊ Performance	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256Kx1	20	CMOS									(Cont'd)	
		CMOS/TTL										
			Seperate	10	125	5	24			ATT7C197-20	AT&T	
		TTL	Common	30	105	5	24			MT5C2561-20	MicronTech (3580)	
		CMOS				5	24			CY7C197-20C	Cypress	
		TTL				5	24			M5M5257B-20	Mitsubishi	
25		BiCMOS				5	24			μPD46251-25	NEC (3592)	5
		CMOS				5	24			TMS6707-25	TI	
							28			CY7C197-25C	Cypress	
							24			ED181257C25C	EDI	
							32			MB81C81A-25	Fujitsu	
							24			HS65758RH	Harris (3527)	10
										IDT71257L-25		
										‡ IDT		
										IDT71257S-25		
										‡ IDT		
										MT5C2561		
										883C-25	‡ MicronTech	
										MT5C2561		
										883C-35	‡ MicronTech	
										MSM1256-25	Mosaic Semi	15
										MS62251A	◊ Mosel	
										MCM6207-25	* Motorola	
										PDM41257L-25		
										◊ Paradigm		
										PDM41257L-25B		
										‡ Paradigm		
										PDM41257S-25		
										◊ Paradigm		20
										PDM41257S-25B		
										‡ Paradigm		
										P4C1257-25C	◊ Performance	
										P4C1257L-25C	◊ Performance	
		CMOS/TTL										
			Seperate	10	100	5	24			ATT7C197-25	AT&T	
		TTL	Common	25	110	5	24			MT5C2561-25	MicronTech	25
		CMOS				5	24			CY7C197-25M	Cypress	
		TTL				5	28			KM61257-25	Samsung	
										KM61257L-25	Samsung	
30		CMOS				5	24			P4C1257-30C	◊ Performance	
										P4C1257-30M		
										‡ Performance		30
										P4C1257L-30C	◊ Performance	
		TTL	Common	25	95	5	24			MT5C2561-30	MicronTech	
35		CMOS				5	28			CY7C197-35C	◊ Cypress	
							24			CY7C197-35M		
										‡ Cypress		
										ED181256C35B	‡ EDI (3466)	35
										ED181256P35B		
										‡ EDI		
							28			ED181257C35C	EDI	
							24			MB81C81A-35	Fujitsu	
										IDT71257L-35		
										‡ IDT		
										IDT71257S-35		
										‡ IDT		
										MSM1256-35	Mosaic Semi	
										MCM6207-35	* Motorola	
										μPD43251-35	◊ NEC	
										PDM41257L-35		
										◊ Paradigm		
										PDM41257L-35B		
										‡ Paradigm		45
										PDM41257S-35		
										◊ Paradigm		
										PDM41257S-35B		
										‡ Paradigm		
										P4C1257-35C	◊ Performance	
										P4C1257-35M		
										‡ Performance		
										P4C1257L-35C	◊ Performance	50
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256Kx1	35	CMOS					5	24		P4C1257L-35M	(Cont'd)	
										LH52251-35	† Performance Sharp (3623)	
			TTL	Common	25	90	5	24		MT5C2561-35	MicronTech (3580)	
			TTL				5	24		MB81C81A	Fujitsu	5
								28		KM61257-35	Samsung	
	45	CMOS					5	24		CY7C197-45C	† Cypress	
										CY7C197-45M	† Cypress	
										ED181256C45B	† EDI (3466)	
										ED181256P45B	† EDI	10
										MB81C81A-45	Fujitsu	
										IDT71257L-45	IDT	
										IDT71257L-45B	† IDT	
										IDT71257S-45	IDT	
										IDT71257S-45B	† IDT	
										MT5C2561		15
										883C-45	† MicronTech	
										MSM1256-45	Mosaic Semi	
										μPD43251-45	† NEC	
										PDM41257L-45	† Paradigm	
										PDM41257L-45B	† Paradigm	20
										PDM41257S-45	† Paradigm	
										P4C1257-45M	† Performance	
										P4C1257L-45M	† Performance	
										LH52251-45	Sharp (3623)	
			TTL	Common	25	90	5	24		MT5C2561-45	MicronTech (3580)	
			TTL				5	28		KM61257-45	Samsung	25
	50	CMOS					5	24		M61256H-05	† AT&T	
	55	CMOS					5	24		ED181256C55B	† EDI (3466)	
										ED181256P55B	† EDI	
										IDT71257L-55	IDT	
										IDT71257L-55B	† IDT	30
										IDT71257S-55	IDT	
										IDT71257S-55B	† IDT	
										MT5C2561		
										883C-55	† MicronTech	
										MSM1256-55	Mosaic Semi	35
										μPD43251-55	† NEC	
										PDM41257L-55B	† Paradigm	
										PDM41257S-55B	† Paradigm	
										P4C1257-55M	† Performance	
										P4C1257L-55M	† Performance	
	70	CMOS					5	24		IDT71257L-70B	† IDT	40
										IDT71257S-70B	† IDT	
										MT5C2561		
										883C-70	† MicronTech	
	100	NMOS					5	16		MT1259-10/883C	† MicronTech (3579)	
	120	NMOS					5	16		MT1259-12/883C	† MicronTech (3579)	
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organiza- tion	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256Kx1	150	NMOS					5	16		MT1259-15/883C ‡ MicronTech (3579)	(Cont'd)	
	200	NMOS					5	16		MT1259-20/883C ‡ MicronTech (3579)		
256Kx4	12	BiCMOS	TTL/CMOS	Common	10	130	5	28		TC55B4256-12 ‡ Toshiba	5	
										TC55B4257-122 ‡ Toshiba		
	15	BiCMOS	TTL/CMOS	Common	10	130	5	28		TC55B4256-15 ‡ Toshiba		
										TC55B4257-15 ‡ Toshiba		
	20	BiCMOS	TTL/CMOS	Common	10	130	5	28		TC55B4256-20 ‡ Toshiba		
										TC55B4257-20 ‡ Toshiba		
	25	BiCMOS	TTL/CMOS	Common	10	130	5	28		ED184258C20C EDI (3463)		10
										MT5C1005 883C-20 ‡ MicronTech MS621002 ‡ Mosel		
	30	BiCMOS	TTL/CMOS	Common	10	130	5	28		ATT7C106-15 ‡ AT&T (3392)		15
										MT5C1005-20 MicronTech		
	35	BiCMOS	TTL/CMOS	Common	10	130	5	28		MB82B005 ‡ Fujitsu MB82B005-25 ‡ Fujitsu (3476) MB82B006 ‡ Fujitsu		20
										CY7C101-25C Cypress CY7C102-25C Cypress		
	40	BiCMOS	TTL/CMOS	Common	10	130	5	28		CY7C106-25C Cypress ED184256L25B ‡ EDI ED184256P25B ‡ EDI ED184258L25C EDI ED184258P25C EDI FS256K4-25CC Inova MT5C1005 883C-25 ‡ MicronTech		25
										M5M51004-25 ‡ Mitsubishi CXK541000-25 ‡ Sony		
	45	BiCMOS	TTL/CMOS	Common	10	130	5	28		ATT7C106-25 ‡ AT&T (3392) MT5C1005-25 MicronTech (3581)		30
										CXK541000-30 ‡ Sony MT5C1005-30 MicronTech		
	50	BiCMOS	TTL/CMOS	Common	10	130	5	28		MB82B005-35 ‡ Fujitsu (3476) CY7C101-35C Cypress CY7C101-35M ‡ Cypress CY7C102-35C Cypress CY7C102-35M ‡ Cypress		35
										CY7C106-35C Cypress CY7C106-35M ‡ Cypress ED184256C35B ‡ EDI (3463) ED184258C35C EDI (3463) HM624256-35 ‡ Hitachi HM624256L-35 ‡ Hitachi		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256Kx4	35	CMOS				5		32		HM624257-35 ♦ Hitachi HM624257L-35 ♦ Hitachi		
								28		FS256K4-35CC Inova FS256K4-35IC Inova FS256K4-35MC † Inova MT5C1005 883C-35 ♦† MicronTech		5
								32		M5M51004-35 ♦ Mitsubishi CXK541000-35 Sony		
								28		TMS62456-35 TI		
								32		TMS62457-35 TI TMS62457L-35 TI		10
								28		VT624256-35 ♦ VLSI Tech		
								24		VT624256L-35 ♦ VLSI Tech		
			TTL	Common	30	120	5	28		MT5C1005-35 MicronTech (3581)		
45	CMOS					5		32		CY7C101-45C Cypress CY7C101-45M † Cypress CY7C102-45C Cypress CY7C102-45M † Cypress		15
								28		CY7C106-45C Cypress CY7C106-45M † Cypress ED184256C45B ♦† EDI (3463) HM624256-45 ♦ Hitachi HM624256L-45 ♦ Hitachi		20
								32		HM624257-45 ♦ Hitachi HM624257L-45 ♦ Hitachi		25
								28		FS256K4-45CC Inova FS256K4-45IC Inova FS256K4-45MC † Inova IDT71028L-45 ♦‡ IDT IDT71028S-45 ♦‡ IDT MT5C1005 883C-45 ♦† MicronTech		30
								32		M5M51004-45 ♦ Mitsubishi		
								28		MSM4256-45 Mosaic Semi TMS62456-45 TI		
								32		TMS62457-45 TI TMS62457L-45 TI		35
								28		VT624256-45 ♦ VLSI Tech		
								24		VT624256L-45 ♦ VLSI Tech		
			TTL	Common	30	120	5	28		MT5C1005-45 MicronTech		
55	CMOS					5		28		ED184256C55B ♦† EDI (3463) ED184256P55B EDI ED184258L55C EDI ED184258P55C EDI ED18426L55B † EDI ED18464L55B EDI IDT71028L-55 ♦‡ IDT IDT71028L-55B ♦‡ IDT IDT71028S-55 ♦‡ IDT IDT71028S-55B ♦‡ IDT MT5C1005 883C-55 ♦† MicronTech		40
								32		M5M51004-55 Mitsubishi		
								28		MSM4256-55 Mosaic Semi (Continued)		45
												50

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
256Kx4	70	CMOS					5	28		ED184256C70B † EDI (3463)		5
										IDT71028L-70 ‡ IDT		
										IDT71028L-70B ‡ IDT		
										IDT71028S-70 ‡ IDT		
										IDT71028S-70B ‡ IDT		
	90	CMOS					5	28		MT5C1005 883C-70 † MicronTech		10
										MSM4256-70 Mosaic Semi		
										IDT71028L-90B ‡ IDT		
										IDT71028S-90B ‡ IDT		
	100	CMOS					5	20		MT4C4256-10/883C †† MicronTech (3579)		15
	120	CMOS					5	20		MT4C4256-12/883C †† MicronTech (3579)		
	150	CMOS					5	20		MT4C4256-15/883C †† MicronTech (3579)		
256Kx8	45	CMOS					5	32		MSM8256-45 Mosaic Semi		20
	55	CMOS					5	32		MSM8256-55 Mosaic Semi		
	70	CMOS					5	32		MSM8256-70 Mosaic Semi		
	100	CMOS					5	35		DPS256P8-100 † Dense-Pac ROHM		
								32		BPS81288P		
	120	CMOS					5	32		WS256K8-120 White Tech		
256Kx16	150	CMOS					5	40		MBM27C4096 † Fujitsu		25
	55	CMOS					5	48		S256K16-55CC Inova		
										S256K16-55IC Inova		
										S256K16L-55CC Inova		
										S256K16L-55IC Inova		
	70	CMOS								S256K16-70CC Inova		30
										S256K16-70IC Inova		
										S256K16-70MC † Inova		
										S256K16L-70CC Inova		
										S256K16L-70IC Inova		
	85	CMOS					5	48		S256K16-70MC † Inova		35
										S256K16-85CC Inova		
										S256K16-85IC Inova		
										S256K16-85MC † Inova		
										S256K16L-85CC Inova		
	100	CMOS					5	48		S256K16L-85MC † Inova		40
										S256L16L-85IC Inova		
										S256K16-100IC Inova		
										S256K16-100MC † Inova		
										S256K16L-100CC Inova		
	120	CMOS					5	48		S256K16L-100IC Inova		45
										S256K16L-100MC † Inova		
										S256K16L-120IC Inova		
										S256K16L-120MC † Inova		
										S256K16L-120MC † Inova		
	120	CMOS					5	48		M4194 White Tech		
										S256K16L-120IC Inova		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY-RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static-General Purpose										(Cont'd)		
512Kx8	10	CMOS	TTL/CMOS									5
				Common	50uA	55	5	32		μPD434000-10	NEC (3592)	
	45	CMOS					5	32		S512K8-45CC	Inova	
										S512K8L-45CC	Inova	
	55	CMOS					5	32		S512K8-55CC	Inova	
										S512K8-55MC †	Inova	
										S512K8L-55CC	Inova	
										S512K8L-55IC	Inova	
										S512K8L-55MC	Inova	
										† Inova		
512Kx8			TTL/CMOS									10
				Common	50uA	70	5	32		μPD434000-55	NEC (3592)	
	70	CMOS					5	32		S512K8-70CC	Inova	
										S512K8-70IC	Inova	
										S512K8-70MC †	Inova	
										S512K8L-70CC	Inova	
										S512K8L-70IC	Inova	
										S512K8L-70MC	Inova	
										† Inova		
										TC518512-70	Toshiba (3721)	
512Kx8			TTL/CMOS									15
				Common	50uA	70	5	32		μPD434000-70	NEC (3592)	
						60	5	32		μPD434000-85	NEC (3592)	
	80	CMOS					5	32		TC518512-80	Toshiba (3721)	
	85						5	32		DPS512S8AN-85	Dense-Pac (3449)	
	100	CMOS					5	32		TC518512-10	Toshiba (3721)	
	120	CMOS					5	76		M4194	White Tech	
	150	CMOS					5	32		MBM27C4001	Fujitsu	
										WS512K8-70CM	† White Tech	
512Kx9	20	CMOS	TTL	Common	5	120	5	28		MT52C9005-20		25
										883	† MicronTech (3581)	
512Kx9	30	CMOS	TTL	Common	5	120	5	28		MT52C9005-30		30
										883C	† MicronTech (3581)	
1Mx1	15	BiCMOS					-5.2	28		MBM10C510-15		35
										† Fujitsu		
										MBM101C510-15	† Fujitsu	
		CMOS	CMOS/TTL	Seperate	10	180	5	28		ATT7C107-15	AT&T (3393)	
	20	CMOS					5	28		MT5C1001		
										883C-20	† MicronTech	
			CMOS/TTL	Seperate	10	140	5	28		ATT7C107-20	AT&T (3393)	
			TTL	Common	35	140	5	28		MT5C1001-20	MicronTech	
	25	BiCMOS					5	32		MB82B001	† Fujitsu	
1Mx1										MB82B001-25	† Fujitsu (3475)	40
		CMOS					5	28		CY7C107-25C	Cypress	
										FS1M1-25CC	Inova	
										S1M1L-25C	Inova	
										MT5C1001		
										883C-25	† MicronTech	
								32		M5M51001-25	† Mitsubishi	
			CMOS/TTL	Seperate	10	180	5	28		ATT7C107-25	AT&T (3393)	
			TTL	Common	30	120	5	28		MT5C1001-25	MicronTech (3580)	
	30	CMOS	TTL	Common	25	90	5	24		MT5C1001-30	MicronTech	
1Mx1	35	BiCMOS					5	32		MB82B001-35	† Fujitsu (3475)	45
		CMOS					5	28		CY7C107-35C	Cypress	
										CY7C107-35M †	Cypress	45
										ED1811024C358	† EDI (3463, 3465)	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Mx1	35	CMOS					5	28			(Cont'd)	
										FS1M1-35CC	Inova	5
										FS1M1-35IC	Inova	
										FS1M1-35MC †	Inova	
										S1M1L-35C	Inova	
										S1M1L-35I	Inova	
										S1M1L-35M †	Inova	
										MT5C1001		
										883C-35	‡ MicronTech	
								32		MSM51001-35	◊ Mitsubishi	
								28		MSM11000-35	Mosaic Semi	
		CMOS/TTL										
		Seperate	10		10	85	5	28		ATT7107-35	◊ AT&T	10
		TTL Common	30		30	120	5	28		MT5C1001-35	MicronTech	
										(3580)		
45	CMOS						5	28				
										CY7C107-45C	Cypress	
										CY7C107-45M †	Cypress	
										ED1811024C45B		
										‡ EDI	(3463, 3465)	15
										FS1M1-45CC	Inova	
										FS1M1-45IC	Inova	
										FS1M1-45MC †	Inova	
										S1M1L-45C	Inova	
										S1M1L-45I	Inova	
										S1M1L-45M †	Inova	20
										IDT71027L-45		
										‡ IDT		
										IDT71027S-45		
										‡ IDT		
										MT5C1001		
										883C-45	‡ MicronTech	
								32		MSM51001-45	◊ Mitsubishi	
								28		MSM11000-45	Mosaic Semi	25
		CMOS/TTL										
		Seperate	10		10	65	5	28		ATT7C107-45	◊ AT&T	(3393)
		TTL Common	30		30	120	5	28		MT5C1001-45	MicronTech	
55	CMOS						5	28				
										ED1811024C55B		
										‡ EDI	(3463, 3465)	
										IDT71027L-55		
										‡ IDT		
										IDT71027L-55B		
										‡ IDT		30
										IDT71027S-55		
										‡ IDT		
										IDT71027S-55B		
										‡ IDT		
										MT5C1001		
										883C-55	‡ MicronTech	
								32		MSM51001-55	◊ Mitsubishi	
								28		MSM11000-55	Mosaic Semi	35
60	CMOS	TTL/CMOS										
		Fast Page	2			85	5	28		HY531000-60	◊ Hyundai	(3531)
70	CMOS						5	28				
										ED1811024C70B		
										‡ EDI	(3463, 3465)	
										IDT71027L-70		
										‡ IDT		
										IDT71027L-70B		
										‡ IDT		40
										IDT71027S-70		
										‡ IDT		
										IDT71027S-70B		
										‡ IDT		
		TTL	Static Column									
			1			100	5	20	Static Column	MT4C4003J-7	MicronTech	
		TTL/CMOS										
		Fast Page	2			85	5	28		HY531000-70	◊ Hyundai	(3531)
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—General Purpose										(Cont'd)		
1Mx1	90	CMOS					5	28		IDT71027L-90B ‡ IDT IDT71027S-90B ‡ IDT	(Cont'd)	5
	100	CMOS					5	18		MT4C1024C-10/883C ‡ MicronTech (3579)		
	120	CMOS					5	18		MT4C1024C-12/883C ‡ MicronTech (3579)		
	150	CMOS					5	18		MT4C1024C-15/883C ‡ MicronTech (3579)		
1Mx4	80	CMOS	TTL	Static Column 1	90	5	20	Static Column		MT4C4003J-8	MicronTech	10
	120	CMOS	TTL	Page Mode 2	90	5	20			MT4C4001-120 883C ‡ MicronTech		
2Kx8	85	CMOS		C	0.1	50	5	28		HY6116CL-85	Hyundai	15
4Mx1	60	CMOS	TTL	Fast Page 1 Static Column 110	110	5	20			MT4C1004J-6	MicronTech	
										MT4C1006J-6	MicronTech	
	70	CMOS	TTL	Fast Page 1 Static Column 1	100	5	20			MT4C1004J-7	MicronTech	
					100	5	20	Static Column		MT4C1006J-7	MicronTech	
	80	CMOS	TTL	Fast Page 1 Static Column 1	90	5	20			MT4C1004J-8	MicronTech	
					90	5	20	Static Column		MT4C1006J-8	MicronTech	
4Mx4	60	CMOS	TTL	Fast Page 1 Static column 1	90	3.3/5	24			MT4C40004-6	MicronTech	15
					90	3.3/5	24	Static Column		MT4C40005-6	MicronTech	
Static—Modules												
4Kx8	25	CMOS					5	24		DPS88H04-25 ‡ Dense-Pac		20
	35	CMOS					5	24		DPS88H04-35 ‡ Dense-Pac		
	45	CMOS					5	24		DPS88H04-45 ‡ Dense-Pac		
	55	CMOS					5	24		DPS88H04-55 ‡ Dense-Pac		
4Kx16	25	CMOS					5	36		DPS4X16-25 ‡ Dense-Pac		25
	35	CMOS					5	36		DPS4X16-35 ‡ Dense-Pac		
	45	CMOS					5	36		DPS4X16-45 ‡ Dense-Pac		
	55	CMOS					5	36		DPS4X16-55 ‡ Dense-Pac		
8Kx4	25	CMOS					5	22		DPS84H08-25 ‡ Dense-Pac		25
	45	CMOS					5	22		DPS84H08-45 ‡ Dense-Pac		
	55	CMOS					5	22		DPS84H08-55 ‡ Dense-Pac		
	70	CMOS					5	22		DPS84H08-70 ‡ Dense-Pac		
	85	CMOS					5	22		DPS84H08-85 ‡ Dense-Pac		
8Kx8	25	CMOS					5	28		DPS88H08-25 ‡ Dense-Pac		30
	35	CMOS					5	28		DPS88H08-35 ‡ Dense-Pac		
	45	CMOS					5	28		DPS88H08-45 ‡ Dense-Pac		
	55	CMOS					5	28		DPS88H08-55 ‡ Dense-Pac		
	70	2-port 2-port slave					5	58		IDT7M134S-70 IDT		
							5	58		IDT7M144S-70 IDT		
	90	2-port					5	58		IDT7M134S-90 IDT IDT7M134S-90B ‡ IDT	(Continued)	35

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
8Kx8	90	2-port slave					5	58		IDT7M144S-90 IDT IDT7M144S-90B † IDT	(Cont'd)	5
	100	CMOS					5	28		HM8808AS-8 † Harris HM8808AS-9 Harris HM8808S-8 † Harris HM8808S-9 Harris		
	120	CMOS					5	28		HM8808AB-8 † Harris HM8808B-8 † Harris HM8808B-9 Harris		
		2-port					5	58		IDT7M134S-120B † IDT		
		2-port slave					5	58		IDT7M144S-120B † IDT		
	140	2-port					5	58		IDT7M134S-140B † IDT		
		2-port slave					5	58		IDT7M144S-140B † IDT		
	150	CMOS					5	28		HM8808A-8 † Harris HM8808A-9 Harris		
	350	CMOS					5	40		HM5-6564-2 Harris		
	400	CMOS					5	40		HM6564-8 † Harris HM6564-9 Harris		
	450	CMOS					5	40		HM6564-5 Harris		
8Kx15x2	20						5	52		P4C92816 ♦ Performance		20
8Kx16	25	CMOS					5	40		DPS8X16A-25 † Dense-Pac		25
	35	CMOS					5	40		DPS8M628-35 ♦ Dense-Pac		
										DPS8X16A-35 † Dense-Pac		
	45	CMOS					5	40		DPS8M628 DPS8M628-45 ♦ Dense-Pac		
							5	40		DPS8X16A-45 † Dense-Pac		
	50						5	40		IDT8MP628-50 IDT IDT8M628S-50 IDT		
	55	CMOS					5	40		DPS8M628-55 ♦ Dense-Pac		
										DPS8X16A-55 † Dense-Pac		
	60						5	40		IDT8M628S-60 IDT IDT8M628S-60B † IDT		
	70						5	40		IDT8M628S-70 IDT IDT8M628S-70B † IDT		
		CMOS					5	40		DPS8M628-70 ♦ Dense-Pac		
										DPS8X16A-70 † Dense-Pac		
	85						5	40		IDT8M628S-85 IDT IDT8M628S-85B † IDT		
		CMOS					5	40		DPS8M628-85 ♦ Dense-Pac		
										DPS8X16A-85 † Dense-Pac		
8Kx16x2	100						5	40		IDT8M628S-100B † IDT		40
		CMOS					5	40		DPS8M628-100 ♦ Dense-Pac		
										DPS8X16A-10 † Dense-Pac		
	120	CMOS					5	40		DPS8X16A-12 † Dense-Pac		
	150	CMOS					5	40		DPS8M628-150 ♦ Dense-Pac		
	200	CMOS					5	40		DPS8M628-200 ♦ Dense-Pac		
8Kx16x2	20						5	52		P4C91616 ♦ Performance P4C92815 ♦ Performance		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
8Kx32	25	CMOS					5	66		DPS832V-25 †	Dense-Pac	5
	35						5	66		DPS832V-35 ‡	Dense-Pac	
	55						5	66		DPS832V-55 ‡	Dense-Pac	
	70						5	66		DPS832V-70 ‡	Dense-Pac	
	100						5	66		DPS832V-100 ‡	Dense-Pac	
	120						5	66		DPS832V-120 ‡	Dense-Pac	
	150						5	66		DPS832V-150 ‡	Dense-Pac	
8Kx60x2	20						5			PMC92860	o Performance	
16Kx4	350	CMOS					5	40		HM5-6564	Harris	10
16Kx8	25	CMOS					5	36		DPS129-25 o‡	Dense-Pac	10
								28		DPS88H16-25		
										o‡ Dense-Pac		
	35	CMOS					5	36		DPS129-35 o‡	Dense-Pac	15
								28		DPS88H16-35		
										o‡ Dense-Pac		
	45	CMOS					5	36		DPS129-45 o‡	Dense-Pac	15
								28		DPS88H16-45		
										o‡ Dense-Pac		
	55	CMOS					5	36		DPS129-55 o‡	Dense-Pac	20
								28		DPS88H16-55		
										o‡ Dense-Pac		
	70	CMOS					5	28		HM8816H-9	Harris	20
			2-port				5	58		IDT7M135S-70 *	IDT	
			2-port slave				5	58		IDT7M145S-70	IDT	
	90	2-port					5	58		IDT7M135S-90 *	IDT	25
										IDT7M135S-90B		
										*† IDT		
		2-port slave					5	58		IDT7M145S-90	IDT	25
										IDT7M145S-90B		
										† IDT		
	120	2-port					5	58		IDT7M135S-120B		25
										*† IDT		
			2-port slave				5	58		IDT7M145S-120B		
	140	2-port					5	58		IDT7M135S-140B		40
										*† IDT		
			2-port slave				5	58		IDT7M145S-140B		
										† IDT		
16Kx16	12	CMOS					5	40		CYM1610-12C	Cypress	30
								36		CYM1611-12C	Cypress	
	15	CMOS					5	52		P4C9157 o†	Performance	35
	20						5	38		DPS16X16-20 ‡	Dense-Pac	
	25						5	40		IDT7M656L-25	IDT	
							5	38		DPS16X16-25 ‡	Dense-Pac	
								40		DPS257-25 o‡	Dense-Pac	
		CMOS						66		DPS832V-25 †	Dense-Pac	40
								36		EDH816H16C-25C		
										EDI		
										EDH816H16C-25MHR		
										† EDI		
										MS1616-25	Mosaic Semi	45
	30	CMOS					5	36		MB85402-30	Fujitsu	
	35						5	40		DPS257	Dense-Pac	
								66		DPS832V-35 ‡	Dense-Pac	
								40		IDT7M656L-35	IDT	
										IDT7M656L-35B		50
										† IDT		
		CMOS					5	38		DPS16X16-35 ‡	Dense-Pac	
								40		DPS257-35 o‡	Dense-Pac	
										DPS8M656-35		
										o‡ Dense-Pac		
								36		EDH816H16C-35MHR		50
										† EDI		
										MS1616-35	Mosaic Semi	
	45	CMOS					5	40		DPS8M656	Dense-Pac	
							5	38		DPS16X16-45 ‡	Dense-Pac	
								40		DPS257-45 o‡	Dense-Pac	
										DPS8M656-45		
										o‡ Dense-Pac		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
16Kx16	45	CMOS					5	36		EDH816H16C-45MHR † EDI MS1616-45 Mosaic Semi	(Cont'd)	
	50						5	40		IDT8MP656-50 IDT		5
	55	CMOS					5	66		DPS832V-55 ‡ Dense-Pac		
							5	40		DPS257-55 † Dense-Pac		
										DPS8M656-55 † Dense-Pac		
										IDT7M656L-55B † IDT		
	60						5	40		IDT8M656S-60B † IDT		10
	70						5	66		DPS832V-70 ‡ Dense-Pac		
								40		IDT8M656S-70B † IDT		
		CMOS					5	40		DPS8M656-70 † Dense-Pac		
	85						5	40		IDT8M656S-85B † IDT		
		CMOS					5	40		DPS8M656-85 † Dense-Pac		
	100						5	66		DPS832V-100 ‡ Dense-Pac		15
								40		IDT8M656S-100B † IDT		
		CMOS					5	40		DPS8M656-100 † Dense-Pac		
	120						5	66		DPS832V-120 ‡ Dense-Pac		
		CMOS					5	40		DPS8M656-120 † Dense-Pac		
	150						5	66		DPS832V-150 ‡ Dense-Pac		20
		CMOS					5	40		DPS8M656-150 † Dense-Pac		
16Kx32	12	CMOS					5	64		CYM1821-12C Cypress (3438) MT8S1632-12 MicronTech (3582)		
	15	CMOS					5	64		CYM1821-15C Cypress (3438) MT8S1632-15 MicronTech (3582)		
		TTL	Common	40	1040		5	64				
	17	CMOS					5	64		PMC1632-17M † Performance		25
	20	CMOS					5	64		CYM1821-20C Cypress (3438) CYM1821L-20C Cypress PMC1632-20M † Performance		
		TTL	Common	40	960		5	64		MT8S1632-20 MicronTech (3582)		
	25	CMOS					5	64		CYM1821-25C Cypress (3438) CYM1821L-25C Cypress PMC1632-25M † Performance		30
		TTL	Common	40	880		5	64		MT8S1632-25 MicronTech		
	30	CMOS					5	64		MB85414-30 Fujitsu MT8S1632-30 MicronTech		35
		TTL	Common	40	800		5	64				
	35	CMOS					5	64		CYM11821L-35C Cypress CYM1821-35C Cypress (3438) PMC1632-35M † Performance		
		TTL	Common	40	800		5	64		MT8S1632-35 MicronTech		40
	40	CMOS					5	64		MB85414-40 Fujitsu		
	45	CMOS					5	64		CYM1821-45C Cypress (3438) CYM1821L-45C Cypress		
16Kx36	30	CMOS					5	70		MB85415-30 Fujitsu		
	40	CMOS					5	70		MB85415-40 Fujitsu		
16Kx60	20						5			PMC91660 † Performance		45

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
16Kx68	25	CMOS					5	104		CYM1910-25C CYM1911-25C	Cypress Cypress	
32Kx8	10	BiCMOS					5	28		CY7M199-10C	Cypress	
		CMOS					5	28		CYM1400-10	Cypress	
	12	BiCMOS					5	28		CY7M199-12C CY7M199-12M †	Cypress Cypress	5
	15	BiCMOS					5	28		CY7M199-15C CY7M199-15M †	Cypress Cypress	
	20	BiCMOS					5	28		CY7M199-20M †	Cypress	10
		CMOS					5	36		DPS16X16-20 ‡ DPS16X17-20 ‡	Dense-Pac Dense-Pac	
	25						5	40		IDT7M656L-25	IDT	
		CMOS					5	36		DPS16X17-25 ‡	Dense-Pac	
								40		DPS257-25 †‡	Dense-Pac	15
								66		DPS832V-25 †	Dense-Pac	
	35						5	66		DPS832V-35 ‡	Dense-Pac	
								40		IDT7M656L-35	IDT	
										IDT7M656L-35B	IDT	
		CMOS					5	36		DPS16X16-35 ‡	Dense-Pac	20
								40		DPS16X17-35 ‡	Dense-Pac	
								28		DPS257-35 †‡	Dense-Pac	
										DPS41257-35	Dense-Pac	
	40						5	28		IDT7M856S-40	IDT	
	45	CMOS					5	28		IDT8M856L-45	IDT	25
							5	36		DPS16X16-45 ‡	Dense-Pac	
										DPS16X17-45 ‡	Dense-Pac	
								40		DPS257-45 †‡	Dense-Pac	
								28		DPS41257-45	Dense-Pac	
	50						5	28		IDT7M856S-50	IDT	30
										IDT8M856L-50	IDT	
	55						5	66		DPS832V-55 ‡	Dense-Pac	
								28		IDT7M856S-55B	IDT	
										† IDT		
										IDT8M856L-55B	IDT	
		CMOS					5	36		DPS16X17-55 ‡	Dense-Pac	35
								28		DPS41257-55	Dense-Pac	
										†‡ Dense-Pac		
	60	CMOS					5	28		IDT8M856L-60	IDT	
							5	28		IDT7M856S-60	IDT	
	65						5	28		IDT7M856S-65B	IDT	
										† IDT		
										IDT8M856L-65B	IDT	
										† IDT		
	70						5	66		DPS832V-70 ‡	Dense-Pac	40
								28		IDT8M856L-70	IDT	
		CMOS					5	28		DPS41257-70	Dense-Pac	
										†‡ Dense-Pac		
	75						5	28		IDT8M856L-75B	IDT	
		CMOS					5	28		IDT7M856S-75B	IDT	
										† IDT		
	85	CMOS					5	28		IDT8M856L-85	IDT	45
							5	28		DPS41257-85	Dense-Pac	
										†‡ Dense-Pac		
	90						5	28		IDT8M856L-90B	IDT	
		CMOS					5	28		IDT7M856S-90B	IDT	
										† IDT		
	100						5	66		DPS832V-100 ‡	Dense-Pac	50
								28		IDT8M856L-100B	IDT	
										† IDT		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
32Kx8	100	CMOS					5	28		DPS41257-100	(Cont'd)	
										‡ Dense-Pac		
										IDT7M856S-100B		
										† IDT		
	120						5	66		DPS832V-120	‡ Dense-Pac	
	150						5	66		DPS832V-150	‡ Dense-Pac	
	180	CMOS					5	28		HM8832-8	† Harris	5
										HM8832-9	Harris	
										HM8832B-8	† Harris	
										HM8832B-9	Harris	
32Kx9	12	CMOS					5	50		DPS288-12	‡ Dense-Pac	
	14						5	32		P4C91589	‡ Performance	10
	15	CMOS					5	50		DPS288-15	‡ Dense-Pac	
	20	CMOS					5	50		DPS288-20	‡ Dense-Pac	
32Kx16	20	CMOS					5	40		MS1632-020	Mosaic Semi	
	25	CMOS					5	40		DPS32X16A-25		
										† Dense-Pac		15
										MS1632-025	Mosaic Semi	
	30	CMOS	TTL	Common	70	210	5	40		MT2S3216-30	MicronTech (3582)	
	35	CMOS					5	40		DPS32X16A-35		
										† Dense-Pac		
										DPS8M612-35		
										‡ Dense-Pac		
										MT2S3216-30	MicronTech (3582)	
												20
			TTL	Common	70	210	5	40		MT2S3216-35	MicronTech (3582)	
	45						5	40		DPS8M612	Dense-Pac	
		CMOS					5	40		DPS32X16A-45		
										† Dense-Pac		
										DPS8M612-45		
										‡ Dense-Pac		
			TTL	Common	50	200	5	40		MT2S3216-45	MicronTech (3582)	
	55	CMOS					5	40		DPS32X16A-55		25
										† Dense-Pac		
										DPS8M612-55		
										‡ Dense-Pac		
	60						5	40		IDT8MP612	IDT	
										IDT8M612	IDT	
	70	CMOS					5	40		DPS32X16A-70		
										† Dense-Pac		
										DPS8M612-70		30
										‡ Dense-Pac		
	75						5	40		IDT8M612-B	† IDT	
	85	CMOS					5	40		DPS32X16A-85		
										† Dense-Pac		
										DPS8M612-85		
										‡ Dense-Pac		
	100	CMOS					5	40		DPS32X16A-10		
										† Dense-Pac		
										DPS8M612-100		35
										‡ Dense-Pac		
	120	CMOS					5	40		DPS32X16A-12		
										† Dense-Pac		
										DPS8M612-120		
										‡ Dense-Pac		
	150	CMOS					5	40		DPS8M612-150		
										‡ Dense-Pac		
	250	TTL					5	68		MB98A9060-25	Fujitsu	
32Kx24	25	CMOS					5	56		CYM1720-25C	Cypress	40
32Kx32	25	CMOS					5	66		CYM1828-25C	Cypress	
										DPS3232V-25	† Dense-Pac	
	30	CMOS					5	66		CYM1828-30C	Cypress	
	35						5	66		DPS3232V-35	‡ Dense-Pac	
		CMOS					5	66		CYM1828-35C	Cypress	45
										CYM1828-35M	† Cypress	
(Continued)												

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

‡ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
32Kx32	35	CMOS					5	66		CYM1828L-35C † Cypress	(Cont'd)	
										CYM1828L-35M † Cypress		
		CMOS					5	66		PUMA2S1000-35 Mosaic Semi		5
	45									DPS3232V-45 ‡ Dense-Pac CYM1828-45C Cypress CYM1828-45M † Cypress CYM1828L-45C Cypress CYM1828L-45M † Cypress		
		CMOS					5	66		PUMA2S1000-45 Mosaic Semi		10
	55									CYM1828-55C Cypress CYM1828-55M † Cypress CYM1828L-55C Cypress CYM1828L-55M † Cypress		
		CMOS					5	66		DPS3232V-55 † Dense-Pac PUMA2S1000-55 Mosaic Semi		15
	70									DPS3232V-70 ‡ Dense-Pac CYM1828-70C Cypress CYM1828-70M † Cypress CYM1828L-70C Cypress CYM1828L-70M † Cypress		
		CMOS					5	66		PUMA2S1000-70 Mosaic Semi		20
	85									DPS3232V-85 † Dense-Pac PUMA2S1000-85 Mosaic Semi		
	100	CMOS					5	66		DPS3232V-100 ‡ Dense-Pac		25
										PUMA2S1000-10 Mosaic Semi		
	120	CMOS					5	66		DPS3232V-120 ‡ Dense-Pac		30
										PUMA2S1000-12 Mosaic Semi		
	150	CMOS					5	66		DPS3232V-150 ‡ Dense-Pac		35
										PUMA2S1000-15 Mosaic Semi		
64Kx4	10	BiCMOS					5	24		CYM7194-10C Cypress		30
	12									CYM7194-12C Cypress		
		CMOS					5	40		CYM7194-12M † Cypress		35
										DPS257-12 † Dense-Pac		
	15	BiCMOS					5	24		CYM7194-15C Cypress		40
										CYM7194-15M † Cypress		
		CMOS					5	40		DPS257-15 † Dense-Pac		45
	20									CYM7194-20M † Cypress		
	25	CMOS					5	40		IDT7M656L-25 IDT		50
										DPS257-25 † Dense-Pac		
		CMOS					5	30		DPS8644-25 † Dense-Pac		55
										DPS8645-25 † Dense-Pac		
	35	CMOS					5	30		DPS8644 DPS8645		60
										IDT7M656L-35 IDT IDT7M656L-35B † IDT		
64Kx6		CMOS					5	40		DPS257-35 † Dense-Pac DPS8644-35 † Dense-Pac DPS8645-35 † Dense-Pac		65
										DPS257-45 † Dense-Pac DPS8644-45 † Dense-Pac DPS8645-45 † Dense-Pac		
	45	CMOS					5	30		DPS8644-55 † Dense-Pac DPS8645-55 † Dense-Pac		70
	55	CMOS					5	40				75
	12	CMOS					5	40		DPS384-12 DPS384-15		80
	15									DPS384-20 DPS384-25		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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(Continued)

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
64Kx6	35	CMOS					5	40		DPS384-35	Dense-Pac	(Cont'd)
	45	CMOS					5	40		DPS384-45	Dense-Pac	
64Kx8	30	CMOS					5	60		MB85410-30	Fujitsu	5
	40	CMOS					5	60		MB85410-40	Fujitsu	
	45	CMOS					5	40		IDT7M812S-45	IDT	
		CMOS					5	32		DPS4648-45 †	Dense-Pac	10
	50	CMOS					5	32		ED18M864C50B † EDI (3466)		
										ED18M864C50C EDI (3466)		
	55						5	40		IDT7M812S-55 IDT		15
										IDT7M812S-55B † IDT		
		CMOS					5	32		DPS4648-55 † Dense-Pac		
	60	CMOS					5	32		ED18M864C60B † EDI (3466)		20
	65						5	40		IDT7M812S-65B † IDT		
	70	CMOS					5	32		DPS4648-70 † Dense-Pac		
	80	CMOS					5	32		ED18M864C80C EDI (3466)		25
	85						5	40		IDT7M812S-85B † IDT		
		CMOS					5	32		DPS4648-85 † Dense-Pac		
64Kx9	100	CMOS					5	32		DPS4648-100		30
	120	CMOS					5	32		DPS4648-120 † Dense-Pac		
	125						5	32		DPS4648 † Dense-Pac		
	150	CMOS					5	32		DPS4648-150		35
	160	CMOS					5	48		HM91M2B-8 † Harris		
										HM91M2B-9 Harris		
	250	TTL					5	68		MB98A9060-25	Fujitsu	40
	30	CMOS					5	70		MB85411-30	Fujitsu	
	40	CMOS					5	70		MB85411-40	Fujitsu	
	45						5	40		IDT7M912S-45	IDT	45
	55						5	40		IDT7M912S-55 IDT		
										IDT7M912S-55B † IDT		
	65						5	40		IDT7M912S-65B † IDT		50
	85						5	40		IDT7M912S-85B † IDT		
	100						5	40		IDT7M912S-100B † IDT		
64Kx16	120						5	33		S64KX9	Peps	55
	15	CMOS					5	42		DPS1024-15 † Dense-Pac		
								40		DPS1037-15 † Dense-Pac		
	20	CMOS					5	40		CYM1621-20C Cypress		40
								42		DPS1024-20 † Dense-Pac		
								40		DPS1037-20 † Dense-Pac		
	25	CMOS					5	40		CYM1622-25C Cypress		45
										CYM1624-25C Cypress		
								42		DPS1024-25 † Dense-Pac		
								40		DPS1037-25 † Dense-Pac		50
								66		DPS3232V-25 † Dense-Pac		
								40		PMC6416-25M † Performance		
	30	CMOS					5	40		IDT7M624S-30 IDT		55
							5	40		CYM1620-30C Cypress		
										PMC6416-30M † Performance		
		TTL	Common	120	210		5	40		MT4S6416-30	MicronTech (3582)	50
	35	CMOS					5	66		DPS3232V-35 † Dense-Pac		
							5	42		DPS1024-35 † Dense-Pac		
								40		DPS1037-35 † Dense-Pac		55
										DPS8M624-35 † Dense-Pac		
										MS1664-35 Mosaic Semi		
										PMC6416-35M † Performance		
		TTL	Common	120	210		5	40		MT4S6416-35	MicronTech (3582)	(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
64Kx32	25	CMOS	TTL	Common	40	760	5	64		MT8S6432-25	MicronTech (3582)	5
	30	CMOS	TTL	Common	40	760	5	64		MB85424-30	Fujitsu	
							5	64		MT8S6432-30	MicronTech (3582)	
	35	CMOS					5	60		DPS6433-35	† Dense-Pac	
								64		DPS6434-35	Dense-Pac	
								60		ED18M3264C35C	EDI (3466)	10
								60		MS3264-35	Mosaic Semi	
			TTL	Common	56	720	5	64		MT8S6432-35	MicronTech (3582)	
	40	CMOS					5	64		MB85424-40	Fujitsu	
	45	CMOS					5	60		DPS6433-45	Dense-Pac	
										DPS6434-45	‡ Dense-Pac	15
										MS3264-45	Mosaic Semi	
	55	CMOS					5	60		DPS6433-55	† Dense-Pac	
								64		DPS6434-55	‡ Dense-Pac	
										ED18F3264C55C	EDI (3463)	
										ED18M3264C55C	EDI (3466)	20
	70	CMOS					5	60		DPS6433-70	† Dense-Pac	
										DPS6434-70	‡ Dense-Pac	
	85	CMOS					5	60		DPS6433-85	† Dense-Pac	
										DPS6434-85	‡ Dense-Pac	
	100	CMOS					5	60		DPS6433-100	† Dense-Pac	25
										DPS6434-100	‡ Dense-Pac	
	120	CMOS					5	60		DPS6433-120	† Dense-Pac	
										DPS6434-120	‡ Dense-Pac	
	150	CMOS					5	60		DPS6433-150	† Dense-Pac	
										DPS6434-150	‡ Dense-Pac	30
64Kx36	30	CMOS					5	70		MB85425-30	Fujitsu	
	40	CMOS					5	70		MB85425-40	Fujitsu	
131071x16	120	CMOS					5	60		DPS6433-120	‡ Dense-Pac	35
128Kx8	15	CMOS					5	42		DPS1024-15	‡ Dense-Pac	
								40		DPS1037-15	‡ Dense-Pac	
	20	CMOS					5	42		DPS1024-20	‡ Dense-Pac	
								40		DPS1037-20	‡ Dense-Pac	
	25	CMOS					5	42		DPS1024-25	‡ Dense-Pac	
								40		DPS1037-25	‡ Dense-Pac	40
								66		DPS3232V-25	† Dense-Pac	
								32		PMC1288-25M	† Performance	
	30	CMOS					5	32		CYM1420-30C	Cypress	
										PMC1288-30M	† Performance	
			TTL	Common	40	190	5	32		MT4S1288-30	MicronTech (3582)	45
	35	CMOS					5	66		DPS3232V-35	‡ Dense-Pac	
							5	42		DPS1024-35	‡ Dense-Pac	
								40		DPS1037-35	‡ Dense-Pac	
								50		DPS128X8A3-35	Dense-Pac	
								32		DPS41288-35	† Dense-Pac	50
										ED18F8128C35M6C	EDI	
										MS8128-35	Mosaic Semi	
										PMC1288-35M	† Performance	
			TTL	Common	40	190	5	32		MT4S1288-35	MicronTech (3582)	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
128Kx8	40	CMOS					5	32		PMC1288-40M † Performance	(Cont'd)	5
	45					5	66		DPS3232V-45 ‡ Dense-Pac			
									40	IDT7M624S-45B † IDT		
		CMOS					5	32		CYM1423-45C Cypress		10
							42		DPS1024-45 † Dense-Pac			
							40		DPS1037-45 † Dense-Pac			
							50		DPS128X8A3-45 † Dense-Pac			
								32		DPS41288-45 † Dense-Pac		
										† Dense-Pac		
										EDI8F8128C45M6C EDI		
										MS8128-45 Mosaic Semi		
										PMC1288-45M † Performance		
		TTL	Common	20	180	5	32			MT4S1288-45 MicronTech (3582)		
	50	CMOS					5	32		EDI8M8128C50B † EDI (3466)		15
										EDI8M8130C50B † EDI		
										EDI8M8130C50C EDI		
	55						5	40		PMC1288-50M † Performance		
										IDT7M624S-55 IDT		20
										IDT7M624S-55B † IDT		
		CMOS					5	50		DPS128X8A3-55 † Dense-Pac		
									32	DPS41288-55 † Dense-Pac		
										† Dense-Pac		
										EDI8F8128C55M6C EDI		
									MS8128-55 Mosaic Semi			
60						5	64		IDT7M824 IDT		25	
								32	IDT8M824 IDT			
	CMOS					5	32		EDI8M8128C60B † EDI (3466)			
									EDI8M8128C60C EDI (3466)			
									EDI8M8130C60B † EDI			
									EDI8M8130C60C EDI			
65	CMOS					5	48		IDT7M624S-65 IDT		30	
									IDT7M624S-65B IDT			
70						5	66		DPS3232V-70 † Dense-Pac		35	
						5	50		DPS128X8A3-70 † Dense-Pac			
	CMOS						32		DPS41288-70 † Dense-Pac			
									† Dense-Pac			
									DPS51288-70 † Dense-Pac			
									† Dense-Pac			
							68		DPS91288-70 † Dense-Pac		40	
							32		EDI8F8128C70B4C EDI			
									EDI8M8130C70B † EDI			
									EDI8M8130C70C EDI			
									MS8128-70 Mosaic Semi			
75						5	64		IDT7M824-B † IDT		45	
								32	IDT8M824-B † IDT			
80	CMOS					5	32		EDI8M8130C80B † EDI			
									† EDI			
									EDI8M8130C80C EDI			
85	CMOS					5	50		DPS128X8A3-85 † Dense-Pac		50	
								32	DPS41288-85 † Dense-Pac			
									† Dense-Pac			
									DPS51288-85 † Dense-Pac			
									† Dense-Pac			
							68		DPS91288-85 † Dense-Pac		55	
							48		IDT7M624S-85B IDT			
							32		MS8128-85 Mosaic Semi			

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
128Kx8	90	CMOS					5	32		EDI8M8128P90B † EDI EDI8M8130C90B † EDI EDI8M8130C90C EDI EDI8M8130P90B † EDI	(Cont'd)	
	100						5	66		DPS3232V-100 ‡ Dense-Pac		5
		CMOS					5	50		DPS128X8A3-100 † Dense-Pac		
								32		DPS41288-100 ⊕‡ Dense-Pac		
										DPS41288P-100 Dense-Pac		
										DPS51288-100 ⊕‡ Dense-Pac		
								68		DPS91288-100 ⊕ Dense-Pac		10
								32		EDI8F8128C100B4C EDI		
										EDI8M8128P100B † EDI		
										EDI8M8130C100B † EDI		
										EDI8M8130C100C EDI		
										EDI8M8130P100B † EDI		15
										S128KX8-150 Micro-C		
										MS8128-10 Mosaic Semi		
										MS88128-100 Mosel		
	120						5	66		DPS3232V-120 ‡ Dense-Pac		20
								32		S128KX8 Peps (3610)		
		CMOS					5	50		DPS128X8A3-120 † Dense-Pac		
								32		DPS41288-120 ⊕‡ Dense-Pac		
										DPS41288P-120 Dense-Pac		
										DPS51288-120 ⊕‡ Dense-Pac		
										EDI8F8128C120B4C EDI		25
										EDI8M8128P120B † EDI		
										EDI8M8130C120B † EDI		
										EDI8M8130C120C EDI		
										EDI8M8130P120B † EDI		30
										MS8128-12 Mosaic Semi		
										MS88128-120 Mosel		
	125						5	32		DPS41288 Dense-Pac		
	150						5	66		DPS3232V-150 ‡ Dense-Pac		
		CMOS					5	50		DPS128X8A3-150 † Dense-Pac		
								32		DPS41288-150 ⊕‡ Dense-Pac		35
										DPS41288P-150 Dense-Pac		
										DPS51288-150 ⊕‡ Dense-Pac		
										EDI8F8128C150B4C EDI		
										EDI8M8128P150B † EDI		
										EDI8M8130C150B † EDI		40
										EDI8M8130C150C EDI		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

⊕ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
128Kx8	150	CMOS					5	32		ED18M8130P150B † EDI MS8128-15 Mosaic Semi	(Cont'd)	
	170	CMOS					5	32		DPS41288P-170 Dense-Pac DPS51288-170 ‡ Dense-Pac		5
	250	TTL					5	68		MB98A9070-25 Fujitsu		
128Kx9	15	CMOS					5	50		DPS1152-15 ‡ Dense-Pac		
	20	CMOS					5	50		DPS1152-20 ‡ Dense-Pac		
	25	CMOS					5	50		DPS1152-25 ‡ Dense-Pac		
	35	CMOS					5	50		DPS1152-35 ‡ Dense-Pac		
	45	CMOS					5	50		DPS1152-45 ‡ Dense-Pac		10
128Kx16	20	CMOS	TTL/CMOS	Common			5	50	PGA	DPS128X16BA3-20 ‡ Dense-Pac		
								66	PGA	DPS128X16BV3-20 † Dense-Pac		
	25	CMOS	TTL/CMOS	Common			5	50	PGA	DPS128X16BA3-25 ‡ Dense-Pac		
								66	PGA	DPS128X16BV3-25 † Dense-Pac		
	35	CMOS					5	50		DPS128X16A3-35 Dense-Pac		15
								66		DPS128X16V3-35 Dense-Pac		
								60		DPS6433-35 † Dense-Pac DPS6434-35 Dense-Pac		
			TTL/CMOS	Common			5	50	PGA	DPS128X16BA3-35 ‡ Dense-Pac		
								66	PGA	DPS128X16BV3-35 † Dense-Pac		20
	45	CMOS					5	50		DPS128X16A3-45 † Dense-Pac		
								66		DPS128X16V3-45 † Dense-Pac		
								60		DPS6433-45 Dense-Pac DPS6434-45 ‡ Dense-Pac		
	55	CMOS					5	50		DPS128X16A3-55 † Dense-Pac		25
								66		DPS128X16V3-55 † Dense-Pac		
								60		DPS6433-55 ‡ Dense-Pac DPS6434-55 ‡ Dense-Pac		
	70	CMOS					5	50		DPS128X16A3-70 † Dense-Pac		
								60		DPS6433-70 ‡ Dense-Pac DPS6434-70 ‡ Dense-Pac		30
	70 nSF	CMOS					5	66		DPS128X16V3-70 † Dense-Pac		
	85	CMOS					5	50		DPS128X16A3-85 † Dense-Pac		
								66		DPS128X16V3-85 † Dense-Pac		
								60		DPS6433-85 ‡ Dense-Pac DPS6434-85 ‡ Dense-Pac		35
	100	CMOS					5	50		DPS128X16A3-100 † Dense-Pac		
								66		DPS128X16V3-100 † Dense-Pac		
								60		DPS6434-100 ‡ Dense-Pac		
	120	CMOS					5	50		DPS128X16A3-120 † Dense-Pac		40
								66		DPS128X16V3-120 † Dense-Pac		
								60		DPS6434-120 ‡ Dense-Pac	(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
128Kx16	150	CMOS					5	50		(Cont'd)		
										DPS128X16A3-150		5
										† Dense-Pac		
										DPS128X16V3-150		
										† Dense-Pac		
	250	TTL					5	68		DPS6433-150		
										± Dense-Pac		
										DPS6434-150	Dense-Pac	
										MB98A9080-25	Fujitsu	
128Kx24	35	CMOS					5	66		DPS128X24V3-35		10
										Dense-Pac		
	45	CMOS					5	66		DPS128X24V3-45		
										† Dense-Pac		
	55	CMOS					5	66		DPS128X24V3-55		
										† Dense-Pac		
	70	CMOS					5	66		DPS128X24V3-70		
										† Dense-Pac		
	85	CMOS					5	66		DPS128X24V3-85		15
										† Dense-Pac		
	100	CMOS					5	66		DPS128X24V3-100		
										† Dense-Pac		
	120	CMOS					5	66		DPS128X24V3-120		
										† Dense-Pac		
	150	CMOS					5	66		DPS128X24V3-150		
										† Dense-Pac		
128Kx32	20	CMOS	TTL	Common	100	480	5	64		MT4S12832-20	MicronTech (3582)	20
			TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-20		
										† Dense-Pac		
	25	CMOS	TTL	Common	100	480	5	64		MT4S12832-25	MicronTech (3582)	
			TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-25		
										† Dense-Pac		
	35	CMOS					5	66		DPS128X32V3-35		
										Dense-Pac		
										PUMA2S4000-35	Mosaic Semi	
			TTL	Common	100	480	5	64		MT4S12832-35	MicronTech (3582)	
			TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-35		
										† Dense-Pac		
	45	CMOS					5	66		DPS128X32V3-45		
								64		† Dense-Pac		
								64		MT4S12832-45	MicronTech (3582)	
								66		PUMA2S4000-45	Mosaic Semi	
	55	CMOS					5	66		DPS128X32V3-55		25
										† Dense-Pac		
										PUMA2S4000-55	Mosaic Semi	
	70	CMOS					5	66		DPS128X32V3-70		
										† Dense-Pac		
										PUMA2S4000-70	Mosaic Semi	
	85	CMOS					5	66		DPS128X32V3-85		
										† Dense-Pac		
	100	CMOS					5	66		DPS128X32V3-100		30
										† Dense-Pac		
	120	CMOS					5	66		DPS128X32V3-120		
										† Dense-Pac		
	150	CMOS					5	66		DPS128X32V3-150		35
										† Dense-Pac		
209715x8	100	CMOS					5	48		DPS1MS16P-10	Dense-Pac (3452)	
256Kx1	25	CMOS					5	30		DPS8256-25	± Dense-Pac	35
	35	CMOS					5	30		DPS8256-35	± Dense-Pac	
	45						5	30		DPS8256	Dense-Pac	
		CMOS Module					5	30		DPS8256-45	± Dense-Pac	
256Kx4	15	CMOS					5	42		DPS1024-15	± Dense-Pac	
								40		DPS1037-15	± Dense-Pac	

(Continued)

† Mil Temp Range (–55° to 125°C)

± High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx4	20	CMOS				5	42	40		DPS1024-20 † Dense-Pac DPS1037-20 † Dense-Pac		
	25	CMOS				5	28	42		CYM1240-25C Cypress DPS1024-25 † Dense-Pac DPS1037-25 † Dense-Pac DPS256P4-25 Dense-Pac		5
	35	CMOS				5	42	40		DPS1024-35 † Dense-Pac DPS1037-35 † Dense-Pac DPS256P4-35 Dense-Pac EDI8F4258C35C EDI		10
							28			EDI8M4257C35B † EDI EDI8M4257C35C † EDI EDI8M4257P35B † EDI EDI8M4257P35C † EDI		
	45	CMOS				5	40			IDT7M624S-45B † IDT DPS1024-45 † Dense-Pac DPS1037-45 † Dense-Pac DPS256P4-45 Dense-Pac EDI8F4258C45C EDI		15
							28			EDI8M4257C45B † EDI EDI8M4257C45C † EDI EDI8M4257P45B † EDI EDI8M4257P45C † EDI		20
	55					5	40			IDT7M624S-55 IDT IDT7M624S-55B † IDT		25
		CMOS				5	30			DPS256P4-55 Dense-Pac EDI8F4258C55C EDI		
							64			EDI8M32256C55C6B † EDI EDI8M4257C55B † EDI EDI8M4257C55C † EDI EDI8M4257P55B † EDI EDI8M4257P55C † EDI		30
	65	CMOS				5	48			IDT7M624S-65 IDT IDT7M624S-65B IDT		
	70	CMOS				5	30	28		EDI8F4258C70C EDI EDI8M4257C70B † EDI EDI8M4257C70C † EDI EDI8M4257P70B † EDI EDI8M4257P70C † EDI		35
							32			EDI8M8256C70B † EDI (3466)		40
256Kx8	85	CMOS				5	48			IDT7M624S-85B IDT EDI8M8256C120C † EDI (3466)		
	120	CMOS				5	32			HM66204L-12 Hitachi		
	150	CMOS				5	32			HM66204L-15 Hitachi		
	15	CMOS	TTL/CMOS			5	60			MCM8256Z15 Motorola		45
	20	CMOS	Separate			5	44		ZIP	DPS8256P8-15 Dense-Pac EDI8F8258C20C EDI MCM8256Z20 Motorola		

MEMORY

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx8	20	CMOS	TTL/CMOS							(Cont'd)		
			Common			5	50	PGA		DPS128X16BA3-20	† Dense-Pac	5
			Separate			5	44	ZIP		DPS8256P8-20	Dense-Pac	
25	CMOS					5	60			CYM1441-25C	Cypress	
							42			DPS256Q8-25 ‡	Dense-Pac	
							44			DPS8256P8-25	Dense-Pac	
							32			EDI8F8256C25M6C	EDI (3464)	10
			TTL/CMOS			5	50	PGA		DPS128X16BA3-25	† Dense-Pac	
30	CMOS		Common			5	60			MB85420-30	Fujitsu	
35	CMOS					5	50			DPS128X16AA3-35	Dense-Pac	
							42			DPS256Q8-35 ‡	Dense-Pac	
							50			DPS256X8A3-35	Dense-Pac	15
							66			DPS256X8V3-35	Dense-Pac	
							60			DPS6433-35	Dense-Pac	
							44			DPS6434-35	Dense-Pac	
							32			DPS8256P8-35	Dense-Pac	
							32			MS8256-35	Mosaic Semi	20
			TTL/CMOS			5	50	PGA		DPS128X16BA3-35	† Dense-Pac	
40	CMOS		Common			5	60			MB85420-40	Fujitsu	
45	CMOS					5	50			DPS128X16AA3-45	Dense-Pac	
							42			DPS256Q8-45 ‡	Dense-Pac	25
							32			DPS256S8AN-45	Dense-Pac	
							50			DPS256S8AP-45	Dense-Pac	
							66			DPS256S8A3-45	Dense-Pac	
							60			DPS256X8A3-45	† Dense-Pac	
							66			DPS256X8V3-45	† Dense-Pac	30
							60			DPS6433-45	Dense-Pac	
							44			DPS6434-45	‡ Dense-Pac	
							60			DPS256P8-45	Dense-Pac	
							32			EDI8F8256C45C	EDI (3464)	
							32			MS8256-45	Mosaic Semi	35
55	CMOS					5	50			DPS128X16AA3-55	Dense-Pac	
							42			DPS256Q8-55 ‡	Dense-Pac	
							32			DPS256S8AN-55	Dense-Pac	
							50			DPS256S8AP-55	Dense-Pac	
							66			DPS256S8A3-55	† Dense-Pac	40
							64			DPS256X8A3-55	† Dense-Pac	
							60			DPS256X8V3-55	† Dense-Pac	
							64			DPS42568-55	Dense-Pac	
							60			DPS6433-55 ‡	Dense-Pac	
							44			DPS6434-55 ‡	Dense-Pac	45
							32			DPS8256P8-55	Dense-Pac	
							32			EDI8F8256C55M6C	EDI (3464)	
							50			MS8256-55	Mosaic Semi	
							50			DPS128X16AA3-70	Dense-Pac	
70	CMOS					5	50			DPS256Q8-70 ‡	Dense-Pac	45
							42			DPS256S8AN-70	Dense-Pac	
							32			DPS256S8AP-70	Dense-Pac	
							50			DPS256S8A3-70	† Dense-Pac	
							50			DPS256X8A3-70	† Dense-Pac	
							50			DPS256X8V3-70	† Dense-Pac	45
							42			DPS256Q8-70 ‡	Dense-Pac	
							32			DPS256S8AN-70	Dense-Pac	
							50			DPS256S8AP-70	Dense-Pac	
							50			DPS256S8A3-70	† Dense-Pac	
							50			DPS256X8A3-70	† Dense-Pac	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx8	70	CMOS					5	66		DPS256X8V3-70	(Cont'd)	5
								64		† Dense-Pac		
								60		DPS42568-70	Dense-Pac	
										DPS6433-70	⚡ Dense-Pac	
										DPS6434-70	⚡ Dense-Pac	
								32		ED18M8256C70C	⚡ EDI (3466)	
										ED18M8256P70B	⚡ EDI	
										ED18M8256P70C	⚡ EDI	
										MS8256-70	Mosaic Semi	
85	CMOS						5	35		DPS256P8-85	† Dense-Pac	10
								42		DPS256Q8-85	‡ Dense-Pac	
								32		DPS256S8AN-85	† Dense-Pac	
										DPS256S8AP-85	Dense-Pac	
								50		DPS256S8A3-85	† Dense-Pac	
								32		DPS256S8N-85	† Dense-Pac	
										DPS256S8P-85	Dense-Pac	
								50		DPS256X8A3-85	† Dense-Pac	
								66		DPS256X8V3-85	† Dense-Pac	
								64		DPS42568-85	Dense-Pac	
								60		DPS6433-85	⚡ Dense-Pac	20
										DPS6434-85	⚡ Dense-Pac	
								32		ED18F8257C85C	EDI (3464)	
										ED18F8257L85C	EDI (3464)	
										ED18F8257P85C	EDI (3464)	
										MS8256-85	Mosaic Semi	
100	CMOS						5	42		DPS256Q8-100	‡ Dense-Pac	25
								50		DPS256S8A3-100	† Dense-Pac	
								32		DPS256S8N-10	† Dense-Pac	
										DPS256S8P-10	Dense-Pac	
								50		DPS256X8A3-100	† Dense-Pac	
								66		DPS256X8V3-100	† Dense-Pac	
								64		DPS42568-100	Dense-Pac	
								60		DPS6433-100	⚡ Dense-Pac	
										DPS6434-100	⚡ Dense-Pac	
								32		ED18M8256C100B	⚡ EDI (3466)	
										ED18M8256C100C	⚡ EDI (3466)	35
										ED18M8256P100B	⚡ EDI	
										ED18M8256P100C	⚡ EDI	
										MS8256-10	Mosaic Semi	
120	CMOS						5	35		DPS256P8-120	† Dense-Pac	40
								42		DPS256Q8-120	‡ Dense-Pac	
								50		DPS256S8A3-120	† Dense-Pac	
								32		DPS256S8N-12	† Dense-Pac	
										DPS256S8P-12	Dense-Pac	
								50		DPS256X8A3-120	† Dense-Pac	
								66		DPS256X8V3-120	† Dense-Pac	
										DPS42568-120	Dense-Pac	
								64				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

⚡ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx8	120	CMOS					5	60		DPS6433-120	(Cont'd)	5
										‡ Dense-Pac		
										DPS6434-120		
										‡ Dense-Pac		
	150	CMOS					5	32		ED18M8256C120B		10
										‡ EDI (3466)		
										ED18M8256P120B		
										‡ EDI		
										ED18M8256P120C		
256Kx9	150	CMOS					5	35		MS8256-12	Mosaic Semi	15
										DPS256P8-150		
										‡ Dense-Pac		
										DPS256Q8-150		
	150	CMOS					5	42		‡ Dense-Pac		20
										DPS256S8A3-150		
										‡ Dense-Pac		
										DPS256S8N-15		
										‡ Dense-Pac		
256Kx16	150	CMOS					5	32		DPS256S8P-15	Dense-Pac	25
										DPS256X8A3-150		
										‡ Dense-Pac		
										DPS256X8V3-150		
	150	CMOS					5	66		‡ Dense-Pac		30
										DPS42568-150	Dense-Pac	
										DPS6433-150		
										‡ Dense-Pac		
										DPS6434-150	Dense-Pac	
256Kx16	150	CMOS					5	32		ED18F8257C150C	EDI (3464)	35
										ED18F8257L150C	EDI (3464)	
										ED18F8257P150C	EDI (3464)	
										ED18M8256C150B		
										‡ EDI (3466)		
	150	CMOS					5	66		ED18M8256P150B		40
										‡ EDI		
										ED18M8256P150C		
										‡ EDI		
										MS8256-15	Mosaic Semi	
256Kx16	250	TTL					5	68		MB98A9080-25	Fujitsu	35
256Kx16	30	CMOS					5	44		CYM1540-30C	Cypress	40
										MB85420-30	Fujitsu	
256Kx16	40	CMOS					5	70		MB85420-40	Fujitsu	40
256Kx16	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-20		30
										‡ Dense-Pac		
										DPS256X16BA3-20		
										‡ Dense-Pac		
256Kx16	25	CMOS					5	48		CYM1641-25C	Cypress	35
										MS16256-025	Mosaic Semi	
256Kx16	25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-25		35
										‡ Dense-Pac		
										DPS256X16BA3-25		
										‡ Dense-Pac		
256Kx16	35	CMOS					5	50		DPS256X16AA3-35	Dense-Pac	40
										DPS256X16A3-35	Dense-Pac	
										DPS256X16V3-35	Dense-Pac	
256Kx16	35	CMOS					5	40		ED18F16257C35C	EDI (3464)	40
										ED18M16256C35B		
										‡ EDI (3466)		
										ED18M16256C35C	EDI (3466)	
256Kx16	35	CMOS					5	48		ED18M16257C35B	‡ EDI (3466)	40
										MS16256-35	Mosaic Semi	
256Kx16	35	CMOS	TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-35	‡ Dense-Pac	40

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
45	CMOS						5	50		DPS256X16AA3-45	Dense-Pac	5
										DPS256X16A3-45	† Dense-Pac	
										† Dense-Pac		
										DPS256X16V3-45	† Dense-Pac	
										ED18M16256C45B	◊† ED1 (3466)	
										ED18M16256C45C	◊ ED1 (3466)	
55	CMOS						5	50		MS16256-45	Mosaic Semi	10
										DPS256X16AA3-55	Dense-Pac	
										DPS256X16A3-55	† Dense-Pac	
										DPS256X16V3-55	† Dense-Pac	
										ED18M16256C55B	◊† ED1 (3466)	
										ED18M16256C55C	◊ ED1 (3466)	
70	CMOS						5	50		ED18M16257C55B	† ED1 (3466)	15
										MS16256-55	Mosaic Semi	
										DPS256X16AA3-70	Dense-Pac	
										DPS256X16A3-70	† Dense-Pac	
										DPS256X16V3-70	† Dense-Pac	
										ED18M16256C70B	◊† ED1 (3466)	
85	CMOS						5	50		ED18M16256C70C	◊ ED1 (3466)	20
										DPS256X16A3-85	† Dense-Pac	
										DPS256X16V3-85	† Dense-Pac	
										DPS256X16A3-100	† Dense-Pac	
										DPS256X16V3-100	† Dense-Pac	
										DPS256X16A3-120	† Dense-Pac	
100	CMOS						5	50		DPS256X16V3-120	† Dense-Pac	25
										DPS256X16A3-150	† Dense-Pac	
										DPS256X16V3-150	† Dense-Pac	
										DPS256X16A3-250	† Dense-Pac	
										DPS256X16V3-250	† Dense-Pac	
										DPS256X16A3-250	† Dense-Pac	
250	TTL						5	68		MB98A9090-25	Fujitsu	
256Kx18	45						5	54		DPS25618	Dense-Pac	
256Kx20	CMOS	TTL/CMOS Common					5	50	DIP	DPS256X20-45	◊ Dense-Pac	30
										DPS256X20-15	◊ Dense-Pac	
										DPS128X20-20	◊ Dense-Pac	
										DPS128X20-25	◊ Dense-Pac	
										DPS128X20-35	◊ Dense-Pac	
										DPS256X20-55	◊ Dense-Pac	
256Kx24	CMOS	TTL/CMOS Common					5	50	DIP	DPS256X24-15	Dense-Pac	35
										DPS256X24-20	◊ Dense-Pac	
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx24										(Cont'd)		
25	CMOS	TTL/CMOS	Common				5	50	DIP	DPS256X24-25	◊ Dense-Pac	5
35	CMOS						5	66		DPS256X24V3-35	Dense-Pac	
		TTL/CMOS	Common				5	50	DIP	DPS256X24-35	◊ Dense-Pac	
45	CMOS						5	66		DPS256X24V3-45	† Dense-Pac	
		TTL/CMOS	Common				5	50	DIP	DPS256X24-45	Dense-Pac	
55	CMOS						5	66		DPS256X24V3-55	† Dense-Pac	10
		TTL/CMOS	COMMON				5	50	DIP	DPS256X24-55	◊ Dense-Pac	
70	CMOS						5	66		DPS256X24V3-70	† Dense-Pac	
85	CMOS						5	66		DPS256X24V3-85	† Dense-Pac	
100	CMOS						5	66		DPS256X24V3-100	† Dense-Pac	
120	CMOS						5	66		DPS256X24V3-120	† Dense-Pac	15
150	CMOS						5	66		DPS256X24V3-150	† Dense-Pac	
256Kx32	20	CMOS	TTL	Common	200	960	5	64		MT8S25632-20	MicronTech (3582)	
			TTL/CMOS	Common			5	64	PGA	DPS256X32BV3-20	† Dense-Pac	
	25	CMOS					5	60		CYM1840-25C	Cypress	
								64		ED18F32256C25C	EDI (3466)	
			TTL	Common	200	960	5	64		MT8S25632-25	MicronTech (3582)	
			TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-25	† Dense-Pac	20
30	CMOS						5	60		CYM1840-30C	Cypress	
35	CMOS						5	60		CYM1840-35C	Cypress	
								64		CYM1840-35M	† Cypress	
								66		CYM1841-35C	Cypress	
								64		DPS256X32V3-35	Dense-Pac	25
								64		ED18M32256C35C68	† EDI (3466)	
								64		ED18M32256C35C6C	EDI (3466)	
								60		MS32256-35	Mosaic Semi	
			TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-35	† Dense-Pac	
			TTL	Common	200	960	5	64		MT8S25632-35	MicronTech (3582)	30
45	CMOS						5	60		CYM1840-45C	Cypress	
								66		CYM1840-45M	† Cypress	
								64		DPS256X32V3-45	† Dense-Pac	
								60		MT8S25632-45	MicronTech (3582)	
								60		MS32256-45	Mosaic Semi	35
55	CMOS						5	60		CYM1840-55C	Cypress	
								66		CYM1840-55M	† Cypress	
								64		DPS256X32V3-55	† Dense-Pac	
								60		ED18M32256C35C6C	EDI (3466)	
								60		MS32256-55	Mosaic Semi	(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
256Kx32	70	CMOS					5	66		DPS256X32V3-70	(Cont'd)	5
										† Dense-Pac		
	85	CMOS					5	66		DPS256X32V3-85	† Dense-Pac	
										† Dense-Pac		
	100	CMOS					5	66		DPS256X32V3-100	† Dense-Pac	
										† Dense-Pac		
512Kx4	120	CMOS					5	66		DPS256X32V3-120	† Dense-Pac	10
										† Dense-Pac		
	150	CMOS					5	66		DPS256X32V3-150	† Dense-Pac	
										† Dense-Pac		
										† Dense-Pac		
512Kx8	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-20	† Dense-Pac	15
								50	PGA	DPS256X16BA3-20	† Dense-Pac	
										† Dense-Pac		
	25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS128X32BV3-25	† Dense-Pac	
								50	PGA	DPS256X16BA3-25	† Dense-Pac	
512Kx8	35	CMOS					5	36		CYM1460-35C	Cypress	20
								32		CYM1466-35C	Cypress	
										CYM1466-35M	† Cypress	
								50		DPS512X8A3-35	Dense-Pac	
								66		DPS512X8V3-35	Dense-Pac	25
								32		MS8512-35	Mosaic Semi	
												30
512Kx8	45	CMOS					5	32		CYM1464-45C	Cypress	35
										CYM1466-45C	Cypress	
										CYM1466-45M	† Cypress	
										DPS512S8AN-45	Dense-Pac	
										DPS512S8AP-45	Dense-Pac	40
								50		DPS512S8A3-45	Dense-Pac	35
512Kx8								66		DPS512X8V3-45	Dense-Pac	40
								32		MS8512-45	Mosaic Semi	
	55	CMOS					5	32		CYM1466-55C	Cypress	35
										CYM1466-55M	† Cypress	
								48		DPS45128-55	† Dense-Pac	
								50		DPS512S8A3-55	Dense-Pac	
												40
512Kx8								32		DPS512S8AN-55	Dense-Pac	35
512Kx8								50		DPS512S8AP-55	Dense-Pac	40
512Kx8										DPS512S8A3-55	† Dense-Pac	35
512Kx8								66		DPS512X8V3-55	† Dense-Pac	40
								36		MS8512-55	Mosaic Semi	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organi- zation	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
512Kx8	70	CMOS					5	36			(Cont'd)	
								32		CYM1461-70C Cypress		
										CYM1466-70C Cypress		
										CYM1466-70M † Cypress		
								44		DPS25616-70 ◊ Dense-Pac		
								48		DPS45128-70		5
										◊‡ Dense-Pac		
								50		DPS512S8AA3-70 Dense-Pac		
										(3449)		
								32		DPS512S8AN-70 Dense-Pac		
85	CMOS						5			(3449)		
										DPS512S8AP-70 Dense-Pac		
										(3449)		
								50		DPS512S8A3-70 † Dense-Pac		
										(3449)		
										DPS512X8A3-70		10
										† Dense-Pac		
								66		DPS512X8V3-70		
										† Dense-Pac		
								68		DPS96122-70 Dense-Pac		
15	CMOS						5	36		MS8512-70 Mosaic Semi		
										CYM1465-85C Cypress		
										CYM1465L-85C Cypress		
										CYM1466-85C Cypress		
										CYM1466-85M † Cypress		
								48		DPS45128-85		
										◊‡ Dense-Pac		
								50		DPS512S8AA3-85 Dense-Pac		
										(3449)		
20	CMOS						5	32		DPS512S8AP-85 Dense-Pac		
										(3449)		
								50		DPS512S8A3-85 † Dense-Pac		
										(3449)		
								32		DPS512S8N-85 ◊‡ Dense-Pac		
										(3449)		
								50		DPS512X8A3-85		
										† Dense-Pac		
								66		DPS512X8V3-85		
										† Dense-Pac		
25	CMOS						5	38		DPS51258P-85		
										◊‡ Dense-Pac		
								68		DPS96122-85 ◊ Dense-Pac		
								32		ED18F8512C85B6C EDI (3464)		
										ED18F8512L85B6C		
										EDI		
								36		MS8512-85 Mosaic Semi		
										ED18M8512C908		
										◊‡ EDI (3466)		
30	CMOS						5	32		ED18M8512C90C ◊ EDI (3466)		
35	CMOS						5	32		CYM1465-100C Cypress		
										CYM1465L-100C Cypress		
										CYM1466-100C Cypress		
										CYM1466-100M		
										† Cypress		
								48		DPS45128-100		
										◊‡ Dense-Pac		
								50		DPS512S8AA3-100 Dense-Pac		
										(3449)		
										DPS512S8A3-100 † Dense-Pac		
40	CMOS						5	32		(3449)		
										DPS512S8N-100		
										◊‡ Dense-Pac		
										(3449)		
								38		DPS512S8P-100		
										◊‡ Dense-Pac		
								50		DPS512X8A3-100		
										† Dense-Pac		
								66		DPS512X8V3-100		
										† Dense-Pac		
40	CMOS						5	68		DPS96122-100		
										◊ Dense-Pac		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
512Kx8	100	CMOS					5	32		ED18M0512C100B	(Cont'd)	
										† EDI (3466)		
									ED18M0512C100C	† EDI (3466)		
									MS8512-10	Mosaic Semi		
	120	CMOS					5	32		S512KX8	Papa (3610)	5
							5	32		CYM1465-120C	Cypress	
										CYM1465L-120C	Cypress	
										CYM1466-120C	Cypress	
										CYM1466-120M	† Cypress	
								48		DPS45128-120		
										† Dense-Pac		
								50		DPS512S8A3-120	† Dense-Pac (3449)	10
								32		DPS512S8N-120		
										† Dense-Pac (3449)		
								38		DPS512S8P-120		
										† Dense-Pac		
								50		DPS512X8A3-120		
										† Dense-Pac		
						66		DPS512X8V3-120				
								† Dense-Pac				
						68		DPS96122-120				
								† Dense-Pac		15		
						32		ED18M0512C120B				
							† EDI (3466)					
							ED18M0512C120C	† EDI (3466)				
							MS8512-12	Mosaic Semi				
135	CMOS					5	32		DPS512S8N-135			
									† Dense-Pac (3449)			
150	CMOS					5	32		CYM1465-150C	Cypress	20	
									CYM1465L-150C	Cypress		
							48		DPS45128-150			
									† Dense-Pac			
							50		DPS512S8A3-150	† Dense-Pac (3449)		
							32		DPS512S8N-150			
									† Dense-Pac (3449)			
							38		DPS512S8P-150			
									† Dense-Pac		25	
							50		DPS512X8A3-150			
							† Dense-Pac					
					66		DPS512X8V3-150					
							† Dense-Pac					
					32		ED18F0512C150B6C	EDI (3464)				
							ED18M0512C150B					
							† EDI (3466)					
							ED18M0512C150C	† EDI (3466)				
							MS8512-15	Mosaic Semi				
170	CMOS					5	48		DPS45128-170			
									† Dense-Pac			
250	TTL					5	68		MB98A9090-25	Fujitsu		
512Kx9	25	CMOS					5	54		DPS25618-25	† Dense-Pac	35
	35	CMOS					5	54		DPS25618-35	† Dense-Pac	
	45	CMOS					5	54		DPS25618-45	† Dense-Pac	
	55	CMOS					5	54		DPS25618-55	† Dense-Pac	
	70	CMOS					5	54		DPS25618-70	† Dense-Pac	
	85	CMOS					5	54		DPS25618-85	† Dense-Pac	
512Kx16	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-20		40
										† Dense-Pac		
									DPS512X16BA3-20			
									† Dense-Pac			
25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-25			
									† Dense-Pac			
									DPS512X16BA3-25			
									† Dense-Pac			
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
512Kx16	35	CMOS					5	50		DPS512X16A3-35	(Cont'd)	
								66		Dense-Pac DPS512X16V3-35	Dense-Pac	
	45	CMOS	TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-35	† Dense-Pac	5
								50	PGA	DPS512X16B3-35	† Dense-Pac	
										† Dense-Pac		
										† Dense-Pac		
	55	CMOS					5	50		DPS512X16A3-45	† Dense-Pac	
								66		DPS512X16V3-45	† Dense-Pac	
	70	CMOS					5	50		DPS512X16A3-55	† Dense-Pac	
								66		DPS512X16V3-55	† Dense-Pac	
	85	CMOS					5	50		DPS512X16A3-70	† Dense-Pac	10
								66		DPS512X16V3-70	† Dense-Pac	
	100	CMOS					5	50		DPS512X16A3-85	† Dense-Pac	
								66		DPS512X16V3-85	† Dense-Pac	
	120	CMOS					5	50		DPS512X16A3-100	† Dense-Pac	
								66		DPS512X16V3-100	† Dense-Pac	
	150	CMOS					5	50		DPS512X16A3-120	† Dense-Pac	15
								66		DPS512X16V3-120	† Dense-Pac	
512Kx24	35	CMOS					5	66		DPS512X16A3-150	† Dense-Pac	
								66		DPS512X16V3-150	† Dense-Pac	
	45	CMOS					5	66		DPS512X24V3-35	Dense-Pac	
								66		DPS512X24V3-45	† Dense-Pac	
	55	CMOS					5	66		DPS512X24V3-55	† Dense-Pac	20
								66		DPS512X24V3-70	† Dense-Pac	
	70	CMOS					5	66		DPS512X24V3-85	† Dense-Pac	
								66		DPS512X24V3-100	† Dense-Pac	
512Kx32	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS512X24V3-120	† Dense-Pac	
								66		DPS512X24V3-150	† Dense-Pac	
	25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS512X24V3-35	† Dense-Pac	
								66		DPS512X24V3-45	† Dense-Pac	
	32	CMOS	TTL/CMOS	Common			5	66	PGA	DPS512X24V3-55	† Dense-Pac	25
								66		DPS512X24V3-70	† Dense-Pac	
	35	CMOS					5	66		DPS512X24V3-85	† Dense-Pac	
								66		DPS512X24V3-100	† Dense-Pac	
512Kx32	45	CMOS					5	66		DPS512X24V3-120	† Dense-Pac	
								66		DPS512X24V3-150	† Dense-Pac	
	55	CMOS					5	66		DPS512X24V3-35	† Dense-Pac	30
								66		DPS512X24V3-45	† Dense-Pac	
	70	CMOS					5	66		DPS512X24V3-55	† Dense-Pac	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

(Continued)

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
512KX32	100	CMOS					5	66		DPS512X32V3-100	(Cont'd)	
										† Dense-Pac (3457)		
	120	CMOS					5	66		DPS512X32V3-120	† Dense-Pac (3457)	
	150	CMOS					5	66		DPS512X32V3-150	† Dense-Pac (3457)	
917504x8	150	CMOS					5	50		DPS896X8A3-150	† Dense-Pac	
1Mx8	25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-25	† Dense-Pac	5
1Mx1	35	CMOS					5	28		ED18M11024C35C4C ED1	(3466)	
	70	CMOS					5	28		ED18M11024C70C4C ED1	(3466)	
1Mx4	55	CMOS					5	44		DPS25616-55	◊ Dense-Pac	
	85	CMOS					5	44		DPS25616-85	◊ Dense-Pac	
1Mx8	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-20	† Dense-Pac	10
								50	PGA	DPS512X16BA3-20	◊† Dense-Pac	
	25	CMOS	TTL/CMOS	Common			5	50	PGA	DPS512X16BA3-25	◊† Dense-Pac	
	35	CMOS					5	50		DPS1MX8A3-35	Dense-Pac	
								66		DPS1MX8V3-35	Dense-Pac	
								50		DPS512X16AA3-35	Dense-Pac	15
			TTL/CMOS	Common			5	66	PGA	DPS256X32BV3-35	† Dense-Pac	
								50	PGA	DPS512X16BA3-35	◊† Dense-Pac	
		CMOS					5	66		DPS256X32AV3-35	Dense-Pac	
45		CMOS					5	50		DPS1MS8A3-45	Dense-Pac	20
								66		DPS1MX8A3-45	† Dense-Pac	
										DPS1MX8V3-45	† Dense-Pac	
										DPS256X32AVS-45	Dense-Pac	
								50		DPS512X16AA3-45	Dense-Pac	
55		CMOS					5	50		DPS1MS8AA3-55	Dense-Pac	25
										DPS1MS8A3-55	† Dense-Pac	
										DPS1MX8A3-55	† Dense-Pac	
								66		DPS1MX8V3-55	† Dense-Pac	
										DPS256X32AVS-55	Dense-Pac	
								50		DPS512X16AA3-55	Dense-Pac	
70		CMOS					5	50		DPS1MS8AA3-70	Dense-Pac	30
										DPS1MS8A3-70	† Dense-Pac	
										DPS1MX8A3-70	† Dense-Pac	
								66		DPS1MX8V3-70	† Dense-Pac	
										DPS256X32AVS-70	Dense-Pac	
								50		DPS512X16AA3-70	Dense-Pac	35

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
1Mx8	85	CMOS					5	36		CYM1471-85C Cypress		(Cont'd)
										CYM1471L-85C Cypress		
									50	DPS1MS8A3-85	† Dense-Pac	
								66		DPS1MX8A3-85	† Dense-Pac	
										DPS1MX8V3-85	† Dense-Pac	
	100	CMOS					5	36		CYM1471-100C Cypress		5
										CYM1471L-100C Cypress		
									50	DPS1MS8A3-100	† Dense-Pac	
								66		DPS1MX8A3-100	† Dense-Pac	
										DPS1MX8V3-100	† Dense-Pac	
	120	CMOS					5	36		CYM1471-120C Cypress		10
										CYM1471L-120C Cypress		
									50	DPS1MS8A3-120	† Dense-Pac	
								66		DPS1MX8A3-120	† Dense-Pac	
										DPS1MX8V3-120	† Dense-Pac	
	150	CMOS					5	50		DPS1MS8A3-150	† Dense-Pac	15
										DPS1MX8A3-150	† Dense-Pac	
								66		DPS1MX8V3-150	† Dense-Pac	
1Mx9	25	CMOS					5	44		MS91000-25	Mosaic Semi	20
	30	CMOS						44		CYM1560-30C Cypress		
	35	CMOS						44		MS91000-30	Mosaic Semi	
	45	CMOS						44		CYM1560-35C Cypress		
										MS91000-35	Mosaic Semi	
1Mx16	100	CMOS					5	48		DPS1MS16XP-100	Dense-Pac (3452)	25
	20	CMOS						66	PGA	DPS512X32BV3-20	† Dense-Pac	
	25	CMOS						66	PGA	DPS512X32BV3-25	† Dense-Pac	
	35	CMOS						66		DPS1MX16V3-35	Dense-Pac	
										DPS512X32AV3-35	Dense-Pac	
	45	CMOS						66		DPS1MX16V3-45	† Dense-Pac	30
										DPS512X32AVS-45	Dense-Pac	
	55	CMOS						66		DPS1MX16V3-55	† Dense-Pac	
										DPS512X32AV3-55	Dense-Pac	
	70	CMOS						66		DPS1MX16V3-70	† Dense-Pac	35
										DPS512X32AV3-70	Dense-Pac	
								44		MS161000-70	Mosaic Semi	
	85	CMOS					5	48		DPS1MS16P-85	Dense-Pac (3452)	
										DPS1MS16XP-85	Dense-Pac (3452)	
											(Continued)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Modules										(Cont'd)		
1Mx16	85	CMOS					5	66		(Cont'd)		
										DPS1MX16V3-85	† Dense-Pac	5
	MS161000-85	Mosaic Semi										
	100	CMOS				5	48		DPS1MS16P-10	Dense-Pac (3452)		
									DPS1MS16X-10	◊ Dense-Pac		
	120	CMOS				5	48		MS161000-10	Mosaic Semi		
									DPS1MS16P-12	Dense-Pac (3452)		
							5	44		DPS1MS16XP-120	Dense-Pac (3452)	
										DPS1MX16V3-120	† Dense-Pac	
	150	CMOS					5	48		MS161000-12	Mosaic Semi	
DPS1MS16P-15										Dense-Pac (3452)		
						5	66		DPS1MS16XP-150	Dense-Pac (3452)		
									DPS1MX16V3-150	† Dense-Pac		
100	CMOS					5	66		DPS1MX16V3-100	† Dense-Pac		
2Mx8	20	CMOS	TTL/CMOS	Common			5	66	PGA	DPS512X32BV3-20		
										Dense-Pac		
	25	CMOS	TTL/CMOS	Common			5	66	PGA	DPS512X32BV3-25		
										† Dense-Pac		
	35	CMOS					5	66		DPS2MX8V3-35		
										Dense-Pac		
			TTL/CMOS	Common			5	66	PGA	DPS512X32AV3-35		
										† Dense-Pac		
	45	CMOS					5	66		DPS2MX8V3-45		
										† Dense-Pac		
							5	66		DPS512X32AV3-45		
										Dense-Pac		
	55	CMOS					5	66		DPS2MX8V3-55		
										† Dense-Pac		
							5	66		DPS512X32AV3-55		
										Dense-Pac		
	70	CMOS					5	66		DPS2MX8V3-70		
										† Dense-Pac		
							5	36		DPS512X32AV3-70		
										Dense-Pac		
85	CMOS					5	36		CYM11481L-85C Cypress			
									CYM1481-85C Cypress			
						5	48		DPS1MS16P-85 Dense-Pac (3452)			
									DPS1MS16XP-85 Dense-Pac (3452)			
						5	66		DPS2MX8V3-85			
									† Dense-Pac			
						5	36		MS82000-85 Mosaic Semi			
100	CMOS					5	36		CYM1481-100C Cypress			
									CYM1481L-100C Cypress			
						5	48		DPS1MS16X-10 ◊ Dense-Pac (3452)			
									DPS1MS16XP-100 Dense-Pac (3452)			
						5	66		DPS2MX8V3-100			
									† Dense-Pac			
						5	36		MS82000-10 Mosaic Semi			
						5	36		CYM1481-120C Cypress			
									CYM1481L-120C Cypress			
120	CMOS					5	36					

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organiza- tion	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—Modules										(Cont'd)			
2Mx8	120	CMOS					5	48		DPS1MS16P-12	Dense-Pac (3452)	5	
										DPS1MS16XP-120	Dense-Pac (3452)		
	150	CMOS					5	48		DPS1MS16P-15	Dense-Pac (3452)		5
										DPS1MS16XP-150	Dense-Pac (3452)		
								66		DPS2MX8V3-120	† Dense-Pac		
								36		MS82000-12	Mosaic Semi		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
1Kx8	35	2-Port					5	48		IDT7140LA-35 ◊* IDT IDT7140SA-35 ◊* IDT	(Cont'd)	
	45	CMOS 2-Port					5	52		CY7C131-45C ◊ Cypress CY7C131-45M ◊† Cypress	(3431) (3431)	
		CMOS, 2-port					5	48		CY7C140-45C Cypress	(3431)	5
		CMOS 2-Port					5	52		CY7C141-45C ◊ Cypress CY7C141-45M ◊† Cypress	(3431) (3431)	
		CMOS, 4-Port					5	108		IDT7050L-45 ◊ IDT IDT7050L-45B ◊† IDT IDT7050S-45 ◊ IDT IDT7050S-45B ◊† IDT		10
		CMOS, 2-port					5	48		CY7C140-45M ◊† Cypress	(3431)	
		2-Port					5	48		CY7C130-45C Cypress	(3431)	
		2-Port					5	48		IDT7130LA-45 ◊† IDT IDT7130LA-45B ◊*‡ IDT IDT7130SA-45 ◊* IDT IDT7130SA-45B ◊*‡ IDT IDT7140LA-45 ◊* IDT IDT7140LA-45B ◊*‡ IDT IDT7140SA-45 ◊* IDT IDT7140SA-45B ◊*‡ IDT		15
	55	CMOS 2-Port					5	52		CY7C131-55C ◊ Cypress CY7C131-55M ◊† Cypress	(3431) (3431)	
		CMOS, 2-port					5	48		CY7C140-55C Cypress CY7C140-55M ◊† Cypress	(3431) (3431)	25
		CMOS 2-Port					5	52		CY7C141-55C ◊ Cypress CY7C141-55M ◊† Cypress	(3431) (3431)	
								48		MS6130-55 Mosel MS6130L-55 Mosel		30
		NMOS, 2-Port					5	48		AM2130-55 AMD		
		2-Port					5	48		IDT7130LA-55 ◊* IDT IDT7130LA-55B ◊*‡ IDT IDT7130SA-55 ◊* IDT IDT7130SA-55B ◊*‡ IDT IDT7140LA-55 ◊* IDT IDT7140LA-55B ◊*‡ IDT IDT7140SA-55 ◊* IDT IDT7140SA-55B ◊*‡ IDT		35

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
1Kx8	70	CMOS 2-Port					5	48		MS6130-70	Mosel	(Cont'd)
										MS6130L-70	Mosel	
										AM2130-70	AMD	
										IDT7130LA-70	◊* IDT	
										IDT7130LA-70B	◊*‡ IDT	
										IDT7130SA-70	◊* IDT	
										IDT7130SA-70B	◊*‡ IDT	
										IDT7140LA-70	◊* IDT	
										IDT7140LA-70B	◊*‡ IDT	
										IDT7140SA-70	◊* IDT	
90	CMOS 2-Port 2-Port						5	48		MS6130-90	Mosel	
										IDT7130LA-90	◊* IDT	
										IDT7130LA-90B	◊*‡ IDT	
										IDT7130SA-90	◊* IDT	
										IDT7130SA-90B	◊*‡ IDT	
										IDT7140LA-90	◊* IDT	
										IDT7140LA-90B	◊*‡ IDT	
										IDT7140SA-90	◊* IDT	
										IDT7140SA-90B	◊*‡ IDT	
100	2-Port 2-Port, Refurbished 2-Port						5	48		AM2130-10	AMD	
										2130-10	Micro-C	
										IDT7130LA-100B	◊*‡ IDT	
										IDT7130SA-100	◊* IDT	
										IDT7130SA-100B	◊*‡ IDT	
										IDT7140LA-100	◊* IDT	
										IDT7140LA-100B	◊*‡ IDT	
										IDT7140SA-100	◊* IDT	
										IDT7140SA-100B	◊*‡ IDT	
120	NMOS, 2-Port 2-Port						5	48		AM2130-12	AMD	
										IDT7130LA-120B	◊*‡ IDT	
										IDT7130SA-120	◊ IDT	
										IDT7130SA-120B	◊*‡ IDT	
										IDT7140LA-120	◊* IDT	
										IDT7140LA-120B	◊*‡ IDT	
										IDT7140SA-120	◊* IDT	
										IDT7140SA-120B	◊*‡ IDT	
1Kx9	20	CMOS, 2-Port					5	48		IDT7010L-20	◊ IDT	
										IDT7010S-20	◊ IDT	
								52		IDT70101L-20	◊ IDT	40
										IDT70101S-20	◊ IDT	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
1Kx9	20	CMOS, 2-Port					5	48		IDT70104L-20 ♦ IDT IDT70104S-20 ♦ IDT	(Cont'd)	
								52		IDT70105L-20 ♦ IDT IDT70105S-20 ♦ IDT		
	25	CMOS, 2-Port					5	48		IDT7010L-25 ♦ IDT IDT7010L-25B ♦† IDT IDT7010S-25 ♦ IDT IDT7010S-25B ♦† IDT	5	
								52		IDT7010L-25 ♦ IDT IDT7010L-25B ♦† IDT IDT7010S-25 ♦ IDT IDT7010S-25B ♦† IDT		
								48		IDT70104L-25 ♦ IDT IDT70104L-25B ♦† IDT IDT70104S-25 ♦ IDT IDT70104S-25B ♦† IDT		
								52		IDT70105L-25 ♦ IDT IDT70105L-25B ♦† IDT IDT70105S-25 ♦ IDT IDT70105S-25B ♦† IDT		
	35	CMOS, 2-Port					5	48		IDT7010L-35 ♦ IDT IDT7010L-35B ♦† IDT IDT7010S-35 ♦ IDT IDT7010S-35B ♦† IDT	20	
								52		IDT7010L-35 ♦ IDT IDT7010L-35B ♦† IDT IDT7010S-35 ♦ IDT IDT7010S-35B ♦† IDT		
								48		IDT70104L-35 ♦ IDT IDT70104L-35B ♦† IDT IDT70104S-35 ♦ IDT IDT70104S-35B ♦† IDT		
								52		IDT70105L-35 ♦ IDT IDT70105L-35B ♦† IDT IDT70105S-35 ♦ IDT IDT70105S-35B ♦† IDT		
	45	CMOS, 2-Port					5	48		IDT7010L-45 ♦ IDT IDT7010L-45B ♦† IDT IDT7010S-45 ♦ IDT IDT7010S-45B ♦† IDT	40	
								52		IDT7010L-45 ♦ IDT IDT7010L-45B ♦† IDT IDT7010S-45 ♦ IDT IDT7010S-45B ♦† IDT		
								48		IDT70104L-45 ♦ IDT IDT70104L-45B ♦† IDT IDT70104S-45 ♦ IDT IDT70104S-45B ♦† IDT		
								52		IDT70105L-45 ♦ IDT IDT70105L-45B ♦† IDT IDT70105S-45 ♦ IDT IDT70105S-45B ♦† IDT		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organ- ization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
1Kx9	45	CMOS, 2-Port					5	52		IDT70105L-45 ◊ IDT IDT70105L-45B ◊† IDT IDT70105S-45 ◊ IDT IDT70105S-45B ◊† IDT	(Cont'd)	
	55	CMOS, 2-Port					5	48		IDT7010L-55 ◊ IDT IDT7010L-55B ◊† IDT IDT7010S-55 ◊ IDT IDT7010S-55B ◊† IDT		5
								52		IDT70101L-55 ◊ IDT IDT70101L-55B ◊† IDT IDT70101S-55 ◊ IDT IDT70101S-55B ◊† IDT		10
								48		IDT70104L-55 ◊ IDT IDT70104L-55B ◊† IDT IDT70104S-55 ◊ IDT IDT70104S-55B ◊† IDT		15
								52		IDT70105L-55 ◊ IDT IDT70105L-55B ◊† IDT IDT70105S-55 ◊ IDT IDT70105S-55B ◊† IDT		20
	70	CMOS, 2-Port					5	48		IDT7010L-70B ◊† IDT IDT7010S-70B ◊† IDT		
								52		IDT70101L-70B ◊† IDT IDT70101S-70B ◊† IDT		
								48		IDT70104L-70B ◊† IDT IDT70104S-70B ◊† IDT		25
								52		IDT70105L-70B ◊† IDT IDT70105S-70B ◊† IDT		
1Kx16	70	2-Port 8/16					5	64		VT16DPB	† VLSI Tech	
2Kx8	25	CMOS					5	48		VT7132-25 ◊ VLSI Tech VT7132A-25 ◊ VLSI Tech		30
								52		VT71321-25 ◊ VLSI Tech VT7142-25 ◊ VLSI Tech VT7142A-25 ◊ VLSI Tech		
								52		VT71421-25 ◊ VLSI Tech		35
		CMOS 2-Port					5	52		CY7C136-25C ◊ Cypress (3431)		
		CMOS, 2-Port					5	48		CY7C140-25C ◊ Cypress (3431) CY7C142-25C ◊ Cypress (3431)		
		CMOS 2-Port					5	52		CY7C146-25C ◊ Cypress (3431)		
		CMOS, 4-Port					5	108		IDT7052L-25 ◊ IDT IDT7052S-25 ◊ IDT		40
30		CMOS					5	48		VT7132-30 ◊ VLSI Tech VT7142-30 ◊ VLSI Tech		
		CMOS, 4-Port					5	108		IDT7052L-30B ◊† IDT IDT7052S-30B ◊† IDT		45

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Configuration	Data I/O	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
2Kx8	30	CMOS, 2-port				5	48			CY7C132-30C	Cypress (3431)	5
										CY7C136-30C	Cypress (3431)	
										CY7C142-30C	Cypress (3431)	
										CY7C146-30C	Cypress (3431)	
	35	CMOS, 2-Port				5	48			VT7132A-30	VLSI Tech	10
										VT7142A-30	VLSI Tech	
										VT71321-30	VLSI Tech	
										VT71421-30	VLSI Tech	
		CMOS 2-Port				5	52	48		VT7132-35	◊ VLSI Tech	15
										VT7142-35	◊ VLSI Tech	
										CY7C136-35C	◊ Cypress (3431)	
										CY7C136-35M	† Cypress (3431)	
	45	CMOS, 2-port				5	48			CY7C142-35C	◊ Cypress (3431)	20
										CY7C142-35M	◊† Cypress (3431)	
										CY7C146-35C	◊ Cypress (3431)	
										CY7C146-35M	◊† Cypress (3431)	
		CMOS, 4-Port				5	108			IDT7052L-35	◊ IDT	25
										IDT7052L-35B	◊† IDT	
										IDT7052S-35	◊ IDT	
										IDT7052S-35B	◊† IDT	
	52	CMOS, 2-port				5	48			CY7C132-35M	† Cypress	30
										VT7132A-35	VLSI Tech	
										VT7142A-35	VLSI Tech	
		Master Slave 2-Port				5	48			VT71321-35	VLSI Tech	35
										VT71421-35	VLSI Tech	
										CY7C132-35C	Cypress (3431)	
										IDT7132LA-35	◊* IDT	
										IDT7132SA-35	◊* IDT	
	52	2-Port				5	48			IDT7142SA-35	◊* IDT	40
										IDT7142LA-35	◊ IDT	
										IDT7142ISA-35	◊ IDT	
	52	CMOS 2-Port				5	52			CY7C136-45C	◊ Cypress (3431)	35
										CY7C136-45M	◊† Cypress (3431)	
										CY7C142-45C	◊ Cypress (3431)	
										CY7C142-45M	◊† Cypress (3431)	
	52	CMOS 2-Port				5	52			CY7C146-45C	◊ Cypress (3431)	40
										CY7C146-45M	◊† Cypress (3431)	
	52	CMOS, 4-Port				5	108			IDT7052L-45	◊ IDT	40
										IDT7052L-45B	◊† IDT	
										IDT7052S-45	◊ IDT	
										IDT7052S-45B	◊† IDT	
	52	CMOS, 2-Port				5	48			VT7132A-45	VLSI Tech	40
										VT7142A-45	VLSI Tech	

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‡ High Rad Resistance

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—Multiport										(Cont'd)			
2Kx8	45	Master					5	48		(Cont'd)			
										VT71321-45	VLSI Tech	5	
										VT71421-45	VLSI Tech		
		CY7C132-45C								Cypress			
		(3431)											
		CY7C132-45M								† Cypress			
		(3431)											
		2-Port								IDT7132LA-45	◊* IDT		
										IDT7132LA-45B	◊*‡ IDT		
										IDT7132SA-45	◊* IDT		
							5	48		IDT7132SA-45B	◊*‡ IDT	10	
		52								IDT71321LA-45B	◊‡ IDT		
										IDT71322L-45B	◊‡ IDT		
										IDT71322S-45B	◊‡ IDT		
		48								IDT7142LA-45B	◊*‡ IDT		
										IDT7142SA-45	◊* IDT		
										IDT7142SA-45B	◊*‡ IDT		
		52								IDT71421LA-45	◊ IDT		
IDT71421LA-45B	◊‡ IDT												
IDT71421SA-45	◊ IDT												
55	CMOS 2-Port						5	52		CY7C136-55C	◊ Cypress	20	
										(3431)			
										CY7C136-55M	◊‡ Cypress		
										(3431)			
										CY7C146-55C	◊ Cypress		
										CY7C146-55M	◊‡ Cypress		
										(3431)			
										CMOS, 2-Port	VT7132-55		VLSI Tech
											VT7142-55		VLSI Tech
		2-Port					5	48		CY7C132-55C	Cypress	25	
										(3431)			
										CY7C132-55M	† Cypress		
		(3431)											
		IDT71322L-55								◊ IDT			
		IDT71322L-55B								◊‡ IDT			
		IDT71322S-55								◊ IDT			
		IDT71322S-55B								◊‡ IDT			
		2-Port								IDT7132LA-55	◊* IDT		
										IDT7132LA-55B	◊*‡ IDT		
IDT7132SA-55B	◊*‡ IDT												
							5	48		IDT71321LA-55B	◊‡ IDT	30	
										IDT7142LA-55B	◊*‡ IDT		
										IDT7142SA-55	◊* IDT		
		52								IDT7142SA-55B	◊*‡ IDT		
		48								IDT71421LA-55	◊ IDT		
										IDT71421LA-55B	◊‡ IDT		
		52								IDT71421LA-55	◊ IDT		
IDT71421LA-55B	◊‡ IDT												
										(Continued)			

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
2Kx8	55	2-Port					5	52		IDT71421SA-55 ◊ IDT IDT71421SA-55B ◊‡ IDT	(Cont'd)	5
	70	CMOS, 2-Port					5	48		V61C32-70 Vitelic V61C32-70L Vitelic VT7132-70 VLSI Tech VT7142-70 VLSI Tech		
		2-Port					5	48		IDT71322L-70 ◊ IDT IDT71322L-70B ◊‡ IDT IDT71322S-70 ◊ IDT IDT71322S-70B ◊‡ IDT		
	70	2-Port					5	48		IDT7132LA-70 ◊° IDT IDT7132LA-70B ◊°‡ IDT IDT7132SA-70B ◊°‡ IDT		
								52		IDT71321SA-70B ◊°‡ IDT IDT7142LA-70B ◊°‡ IDT IDT7142SA-70 ◊° IDT IDT7142SA-70B ◊°‡ IDT		
	90	CMOS, 2-Port					5	48		IDT71421LA-70B ◊°‡ IDT IDT71421SA-70B ◊°‡ IDT		
		2-Port					5	48		V61C32-90 Vitelic V61C32-90L Vitelic VT7132-90 VLSI Tech VT7142-90 VLSI Tech		
2Kx8	90	2-Port					5	48		IDT7132LA-90 ◊° IDT IDT7132LA-90B ◊°‡ IDT IDT7132SA-90B ◊°‡ IDT IDT7142LA-90B ◊°‡ IDT IDT7142SA-90 ◊° IDT IDT7142SA-90B ◊°‡ IDT		25
	100	2-Port					5	48		IDT7132LA-100 ◊° IDT IDT7132LA-100B ◊°‡ IDT IDT7132SA-100 ◊° IDT IDT7132SA-100B ◊°‡ IDT IDT7142LA-100 ◊° IDT IDT7142LA-100B ◊°‡ IDT IDT7142SA-100 ◊° IDT IDT7142SA-100B ◊°‡ IDT		
	120	2-Port					5	48		IDT7132LA-120 ◊° IDT IDT7132LA-120B ◊°‡ IDT IDT7132SA-120 ◊° IDT IDT7132SA-120B ◊°‡ IDT		40

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
2Kx8	120	2-Port					5	48		IDT7142LA-120 ◊* IDT IDT7142LA-120B ◊*‡ IDT IDT7142SA-120 ◊* IDT IDT7142SA-120B ◊*‡ IDT	(Cont'd)	
2Kx9	20	CMOS, 2-Port					5	48		IDT7012L-20 ◊ IDT IDT7012S-20 ◊ IDT		5
								52		IDT70121L-20 ◊ IDT IDT70121S-20 ◊ IDT IDT70125L-20 ◊ IDT IDT70125S-20 ◊ IDT		10
	25	CMOS, 2-Port					5	48		IDT7012L-25 ◊ IDT IDT7012L-25B ◊† IDT IDT7012S-25 ◊ IDT IDT7012S-25B ◊† IDT		15
								52		IDT70121L-25 ◊ IDT IDT70121L-25B ◊† IDT IDT70121S-25 ◊ IDT IDT70121S-25B ◊† IDT IDT70125L-25 ◊ IDT IDT70125L-25B ◊† IDT IDT70125S-25 ◊ IDT IDT70125S-25B ◊† IDT		20
	35	CMOS, 2-Port					5	48		IDT7012L-35 ◊ IDT IDT7012L-35B ◊† IDT IDT7012S-35 ◊ IDT IDT7012S-35B ◊† IDT		25
								52		IDT70121L-35 ◊ IDT IDT70121L-35B ◊† IDT IDT70121S-35 ◊ IDT IDT70121S-35B ◊† IDT IDT70125L-35 ◊ IDT IDT70125L-35B ◊† IDT IDT70125S-35 ◊ IDT IDT70125S-35B ◊† IDT		30
	45	CMOS, 2-Port					5	48		IDT7012L-45 ◊ IDT IDT7012L-45B ◊† IDT IDT7012S-45 ◊ IDT IDT7012S-45B ◊† IDT		35
								52		IDT70121L-45 ◊ IDT IDT70121L-45B ◊† IDT IDT70121S-45 ◊ IDT IDT70121S-45B ◊† IDT IDT70125L-45 ◊ IDT IDT70125L-45B ◊† IDT IDT70125S-45 ◊ IDT IDT70125S-45B ◊† IDT		40
	55	CMOS, 2-Port					5	48		IDT7012L-55 ◊ IDT IDT7012L-55B ◊† IDT		45

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
2Kx9	55	CMOS, 2-Port					5	48		IDT7012S-55 ♦ IDT IDT7012S-55B ♦† IDT	(Cont'd)	5
								52		IDT70121L-55 ♦ IDT IDT70121L-55B ♦† IDT IDT70121S-55 ♦ IDT IDT70121S-55B ♦† IDT IDT70125L-55 ♦ IDT IDT70125L-55B ♦† IDT IDT70125S-55 ♦ IDT IDT70125S-55B ♦† IDT		
	70	CMOS, 2-Port					5	48		IDT7012L-70B ♦† IDT IDT7012S-70B ♦† IDT		10
								52		IDT70121L-70B ♦† IDT IDT70121S-70B ♦† IDT IDT70125L-70B ♦† IDT IDT70125S-70B ♦† IDT		
2Kx16	70	2-Port					5	68		IDT7133L-70B ♦*‡ IDT IDT7133S-70B ♦*‡ IDT IDT7143L-70B ♦*‡ IDT IDT7143S-70B ♦*‡ IDT		20
	90	2-port					5	68		IDT7133L-90 ♦* IDT IDT7133L-90B ♦*† IDT		
		2-port slave					5	68		IDT7143L-90 ♦* IDT IDT7143L-90B ♦*† IDT		
		2-Port					5	68		IDT7133S-90 ♦* IDT IDT7133S-90B ♦*‡ IDT IDT7143S-90 ♦* IDT IDT7143S-90B ♦*‡ IDT		25
4Kx8	15	BiCMOS, 2-port					5	68		CY7B138-15C Cypress		30
	20	BiCMOS, 2-port					5	48		CY7B134-20C Cypress CY7B135-20C Cypress		
	25	BiCMOS, 2-port					5	48		CY7B134-25C Cypress CY7B134-25M † Cypress CY7B135-25C Cypress CY7B135-25M † Cypress		35
								68		CY7B138-25C Cypress CY7B138-25M † Cypress		
	35	BiCMOS, 2-port					5	48		CY7B134-35C Cypress CY7B134-35M † Cypress CY7B135-35C Cypress CY7B135-35M † Cypress		40
								68		CY7B138-35C Cypress CY7B138-35M † Cypress		
	45	2-port slave 2-Port					5	68		IDT7134S-45 ♦ IDT IDT7134L-45B ♦*‡ IDT IDT7134S-45B ♦*‡ IDT		45
								68				

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
4Kx8	45	2-Port					5	52		IDT71342L-45B ‡ IDT	(Cont'd)	5
										IDT71342S-45B ‡ IDT		
	55	2-port					5	68		IDT7134L-55B ‡ IDT		
		2-port slave					5	68		IDT7134S-55 † IDT IDT7134S-55B † IDT		
		2-Port					5	52		IDT71342L-55B ‡ IDT		
										IDT71342S-55B ‡ IDT		
	70	2-Port					5	68		IDT7134L-70B ‡ IDT		
										IDT7134S-70 † IDT IDT7134S-70B † IDT		
								52		IDT71342L-70B ‡ IDT		
										IDT71342S-70B ‡ IDT		
4Kx16	30	CMOS, 2-Port					5	84		IDT7024L-30 † IDT IDT7024S-30 † IDT		15
	35	CMOS, 2-Port					5	84		IDT7024L-35 † IDT IDT7024S-35 † IDT		
	45	CMOS, 2-Port					5	84		IDT7024L-45 † IDT IDT7024L-45B † IDT		
										‡ IDT IDT7024S-45 † IDT IDT7024S-45B † IDT		
	55	CMOS, 2-Port					5	84		IDT7024L-55 † IDT IDT7024L-55B † IDT		
										‡ IDT IDT7024S-55 † IDT IDT7024S-55B † IDT		
	70	CMOS, 2-Port					5	84		IDT7024L-70B ‡ IDT		
										IDT7024S-70B ‡ IDT		
										‡ IDT		
										‡ IDT		
8Kx8	15	BiCMOS, 2-port					5	68		CY7B144-15C Cypress		30
	25	BiCMOS, 2-port					5	68		CY7B144-25C Cypress CY7B144-25M † Cypress		
	35	BiCMOS, 2-port					5	68		CY7B144-35C Cypress CY7B144-35M † Cypress		
		CMOS, 2-Port					5	68		IDT7005L-35 † IDT IDT7005S-35 † IDT		
	45	CMOS, 2-Port					5	68		IDT7005L-45 † IDT IDT7005L-45B † IDT		
										IDT7005S-45 † IDT IDT7005S-45B † IDT		
	55	CMOS, 2 Port					5	68		IDT7005L-55B † IDT IDT7005L-55 † IDT		
		CMOS, 2-Port					5	68		IDT7005S-55 † IDT IDT7005S-55B † IDT		
	70	CMOS, 2-Port					5	68		IDT7005L-70B † IDT IDT7005S-70B † IDT		
										‡ IDT		
8Kx16	30	CMOS, 2-Port					5	84		IDT7025L-30 † IDT IDT7025S-30 † IDT		45
	35	CMOS, 2-Port					5	84		IDT7025L-35 † IDT IDT7025S-35 † IDT		
	45	CMOS, 2-Port					5	84		IDT7025L-45 † IDT IDT7025L-45B † IDT		
										‡ IDT		

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‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Multiport										(Cont'd)		
8Kx16	45	CMOS, 2-Port					5	84		IDT7025S-45 ◊ IDT IDT7025S-45B ◊† IDT	(Cont'd)	5
	55	CMOS, 2-Port					5	84		IDT7025L-55 ◊ IDT IDT7025L-55B ◊† IDT IDT7025S-55 ◊ IDT IDT7025S-55B ◊† IDT		
	70	CMOS, 2-Port					5	84		IDT7025L-70B ◊† IDT IDT7025S-70B ◊† IDT		
16Kx8	35	CMOS, 2-Port					5	68		IDT7006L-35 ◊ IDT IDT7006S-35 ◊ IDT		10
	45	CMOS, 2-Port					5	68		IDT7006L-45 ◊ IDT IDT7006L-45B ◊† IDT IDT7006S-45 ◊ IDT IDT7006S-45B ◊† IDT		
	55	CMOS, 2-Port					5	68		IDT7006L-55 ◊ IDT IDT7006L-55B ◊† IDT IDT7006S-55 ◊ IDT IDT7006S-55B ◊† IDT		15
	70	CMOS, 2-Port					5	68		IDT7006L-70B ◊† IDT IDT7006S-70B ◊† IDT		
256Kx4	100	CMOS 2-Port Graphics Buffer					5	28		S256KX4-100 Micro-C μPD42273-10 NEC μPD42274-10 NEC (3591)		25
	120	CMOS 2-Port Graphics Buffer					5	28		S256KX4-120 Micro-C μPD42273-12 NEC μPD42274-12 NEC (3591)		
Static—NOVRAMs												
8x8	750	CMOS					5	8		S2430 ◊ Seiko Instr		30
16x16	400	CMOS Serial					5	8		CAT24C44 Catalyst Semi CAT24C44I Catalyst Semi (3425)		
	750	CMOS					5	8		S2444 Seiko Instr S2445 ◊ Seiko Instr		
64x4	200	CMOS					5	18		CAT22C10-20 Catalyst Semi (3425) CAT22C10I-20 Catalyst Semi		35
	300	CMOS					5	18		CAT22C10-30 Catalyst Semi (3425) CAT22C10I-30 Catalyst Semi (3425) S2210 Seiko Instr		
128x8	100	NVRAM					5	24		FM1008 Ramtron		40
256x4	200	CMOS					5	18		CAT22C12-20 Catalyst Semi (3425) CAT22C12I-20 Catalyst Semi (3425)		
	300	CMOS					5	18		CAT22C12-30 Catalyst Semi (3425) CAT22C12I-30 Catalyst Semi (3425) S2212 Seiko Instr		
256x8	100	NVRAM					5	24		FM1108 Ramtron		45
512x8	100	NVRAM					5	24		FM1208 Ramtron		
1Kx8	100	NVRAM					5	24		FM1308 ◊ Ramtron		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—NOVRAMs										(Cont'd)		
2Kx8	20	CMOS					5	28		STK10C48-20	Simtek	5
								24		STK10C48-20	Simtek	
	25	CMOS					5	24		STK10C48-25	Simtek	
										STK11C48-25	Simtek	
										STK11C48-25M	† Simtek	
	25 nsf	CMOS					5	28		STK10C48-25M	† Simtek	10
										STK10C48-30	Simtek	
										STK10C48-30M	† Simtek	
	30	CMOS					5	24		STK11C48-30	Simtek	
								24		STK11C48-30M	† Simtek	
8Kx8	35	CMOS					5	24		STK10C48-35	Simtek	15
										STK11C48-35	Simtek	
	45	CMOS					5	24		STK10C48-45	Simtek	
										STK11C48-45	Simtek	
	55	CMOS					5	24		STK10C48-55	Simtek	
										STK11C48-55	Simtek	20
	100	NVRAM					5	24		FM1408	◊ Ramtron	
	150	CMOS					5	24		DS1381	Dallas	
										GR281	Greenwich	
	200	NVRAM, Battery					5	24		NVR2	Greenwich	
8Kx8	25	CMOS					5	28		STK10C68-25	Simtek (3692)	25
										STK10C68-30	Simtek (3692)	
										STK11C68-25	Simtek (3691)	
	30	CMOS					5	28		STK10C68-30M	† Simtek (3692)	
										STK11C68-30	Simtek (3691)	
										STK11C68-30M	† Simtek (3691)	30
		TTL/CMOS			Common 2	75	5	28	Auto Store nvSRAM	STK12C68-30	◊ Simtek	
										STK12C68-35	◊ Simtek	
	35	CMOS					5	28		STK10C68-35	◊ Simtek (3692)	
										STK10C68-35M	† Simtek (3692)	
8Kx8										STK11C68-35	◊ Simtek (3691)	35
										STK11C68-35M	† Simtek	
	45	CMOS					5	28		STK10C68-45	◊ Simtek	
										STK10C68-45M	◊† Simtek (3692)	
										STK11C68-45	◊ Simtek (3691)	
										STK11C68-45M	◊† Simtek (3691)	40
		TTL/CMOS			Common 2	75	5	28	Auto store nvSRAM	STK12C68-45	◊ Simtek	
	55	CMOS					5	28		STK10C68-55M	◊† Simtek (3692)	
										STK11C68-55M	◊† Simtek (3691)	
		TTL/CMOS			Common 2	75	5	28	Autostore nvSRAM	STK12C68-55	◊ Simtek	
8Kx8	85	CMOS			Common 4	75	5	28		bq4010Y-85	Benchmark	45
		NVSRAM					5	28		bq4010-85	Benchmark	
	100	CMOS					5	28		MK48T08-10	SGS-Thomson	
										MK48Z08-10	SGS-Thomson	
										MK48Z18-10	SGS-Thomson	
										MK48Z19-10	SGS-Thomson	50
	150	CMOS					5	28		MK48T08-15	SGS-Thomson	
										MK48Z08-15	SGS-Thomson	
										MK48Z18-15	SGS-Thomson	
										MK48Z19-15	SGS-Thomson	
8Kx8					Common 4	75	5	28		bq4010Y-150	Benchmark	55
		NVRAM, Battery					5	28		GR881	Greenwich	
		NVSRAM					5	28		bq4010-150	Benchmark	
	200	CMOS			Common 4	75	5	28		bq4010Y-200	Benchmark	
		NVSRAM					5	28		bq4010-200	Benchmark	
16Kx1	400	Magnetoresistive					5			MRAM	‡ Honeywell	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—NOVRAMs										(Cont'd)		
32Kx8	CMOS	Common	4	75	5	28				bq4011Y-100	Benchmarkq	5
	35	CMOS NVSRAM	Common	4	125	5	28			bq4011HY-35	Benchmarkq	
						5	28			bq4011H-35	Benchmarkq	
	45	CMOS NVSRAM	Common	4	125	5	128			bq4011HY-45	Benchmarkq	
						5	28			bq4011H-45	Benchmarkq	
	100	CMOS NVSRAM				5	28			MK48Z30-10	SGS-Thomson	10
						5	28			bq4011-100	Benchmarkq	
	120	CMOS				5	28			MK48Z30-12	SGS-Thomson	
	150	CMOS	Common	4	75	5	28			bq4011Y-150	Benchmarkq	
		CMOS with Battery, NVSRAM				5	28			GR3281	Greenwich	
128Kx8	200	CMOS NVSRAM	Common	4	75	5	28			bq4011-150	Benchmarkq	15
						5	28			bq4011Y-200	Benchmarkq	
						5	28			bq4011-200	Benchmarkq	
	70	NVRAM				5	32			DS1245-70	Dallas	
	85	CMOS NVSRAM	Common	4	105	5	32			bq4013Y-85	Benchmarkq	
128Kx8 (NVRAM)						5	32			bq4013-85	Benchmarkq	20
	120	CMOS NVSRAM	Common	4	105	5	32			bq4013Y-120	Benchmarkq	
						5	32			bq4013-120	Benchmarkq	
	150	CMOS				5	32			GR12882	Greenwich	
										GR12881	Greenwich	
128Kx16	85	CMOS NVSRAM	Common	4	200	5	40			bq4024Y-85	Benchmarkq	25
						5	40			bq4024-85	Benchmarkq	
	120	CMOS NVSRAM	Common	5	200	5	40			bq4024Y-120	Benchmarkq	
						5	40			bq4024-120	Benchmarkq	
	256Kx8	CMOS NVSRAM	Common	4	110	5	32			bq4014Y-85	Benchmarkq	30
256Kx16						5	32			bq4014-85	Benchmarkq	
	120	CMOS NVSRAM	Common	4	110	5	32			bq4014Y-120	Benchmarkq	
						5	32			bq4014-120	Benchmarkq	
	85	CMOS NVSRAM	Common	5	200	5	40			bq4025Y-85	Benchmarkq	35
512Kx8						5	40			bq4025-85	Benchmarkq	
	120	CMOS NVSRAM	Common	5	200	5	40			bq4025Y-120	Benchmarkq	
						5	40			bq4025-120	Benchmarkq	
	85	CMOS NVSRAM	Common	5	115	5	32			bq4015Y-85	Benchmarkq	
						5	32			bq4015-85	Benchmarkq	
Static—Cache Tag	120	CMOS NVSRAM	Common	5	115	5	28			bq4015Y-120	Benchmarkq	40
						5	32			bq4015-120	Benchmarkq	
	2x2x8Kx16	13	CMOS TTL	Common	250	5	52			P4C92816-13C		
		17	CMOS TTL	Common	250	5	52			P4C92816-17C	Performance	
										P4C92816-17C	Performance	
2x8Kx15	17	CMOS TTL	Common	250	5	52				P4C92815-17C	Performance	45
	2x4096x16	25	CMOS			5	52			ATT7C183-25	AT&T (3400)	
						5	52			ATT7C184-25	AT&T (3400)	
	35	CMOS				5	52			ATT7C183-35	AT&T (3399)	
2x8192x15						5	52			ATT7C184-35	AT&T (3400)	50
	45	CMOS				5	52			ATT7C183-45	AT&T (3399)	
										ATT7C184-45	AT&T (3400)	
	2x8192x15	13	CMOS TTL	Common	250	5	52			P4C92815-13C	Performance	
512x9	20	CMOS				5	24			SN74ACT2150A-20	Ti	55
						5	24			SN74ACT2150A-30	Ti	
	30	CMOS				5	24					
	1Kx4	10	CMOS			5	24			CY7C150-10C	Cypress	
		12	CMOS			5	24			CY7C150-12C	Cypress	
1Kx4						5	24			CY7C150-12M	Cypress	60
	15	CMOS				5	24			CY7C150-15M	Cypress	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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IC MASTER

MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Cache Tag										(Cont'd)		
2Kx8	20	CMOS					5	28		SN74ACT2152A-20 ◊* TI		5
										SN74ACT2154A-20 ◊* TI		
										VT7152-20 VLSI Tech		
										VT7154-20 VLSI Tech		
	22	CMOS					5	44		SN74ACT2155-22 ◊* TI		
25	Cache Tag						5	28		VT7152-25 VLSI Tech		10
										VT7154-25 VLSI Tech		
	CMOS						5	28		SN74ACT2152A-25 ◊* TI		
										SN74ACT2154A-25 ◊* TI		15
35	Cache Tag						5	28		VT7152-35 VLSI Tech		
										VT7154-35 VLSI Tech		
	CMOS											
2Kx16x2	25	CMOS					5	44		UM61165L-25 ◊ UMC		20
	35	CMOS					5	44		UM61165L-35 ◊ UMC		
	45	CMOS					5	44		UM61165L-45 ◊ UMC		
2Kx20	20	CMOS					5	68		MK4202-20 ◊ SGS-Thomson		25
	22	CMOS					5	68		MK4202-22 ◊ SGS-Thomson		
	25	CMOS					5	68		MK4202-25 ◊ SGS-Thomson		
4Kx1	5	BiCMOS	ECL	Separate		200	-5.2	24	10K/10KH ECL 100K ECL	CY10E470-5 ◊† Aspen CY100E470-5 ◊† Aspen		
4Kx4	5	BiCMOS	ECL	Separate		320	-5.2 -4.5 -5.2	28 28 28	10K/10KH ECL 100K ECL 100K ECL	CY10E484-5 ◊ Aspen CY100E484-5 ◊ Aspen CY101E484-5 ◊ Aspen		30
	10	CMOS					5	22		ATT7C180-10 ◊ AT&T (3399) ATT7C181-10 ◊ AT&T		
	12	CMOS					5	22		ATT7C180-12 ◊ AT&T (3399) ATT7C181-12 ◊ AT&T (3399) IDT6177S-12 IDT IDT6178S-12 * IDT IS61C180-12 ISSI QS8780-12 ◊ Quality Semi (3613) MK41S80-12 SGS-Thomson		
	15	CMOS					5	22		ATT7C180-15 ◊ AT&T (3399) ATT7C181-15 ◊ AT&T (3399) IDT6177S-15B † IDT IDT6178S-15B *† IDT IS61C180-15 ISSI QS8780-15 ◊ Quality Semi (3613) MK41S80-15 SGS-Thomson		35
	20	CMOS					5	22		ATT7C180-20 ◊ AT&T (3399) ATT7C181-20 ◊ AT&T (3399) IS61C180-20 ISSI QS8780-20 ◊ Quality Semi (3613) MK41H80-20 SGS-Thomson		
	22	CMOS					5	22		MK41H80-22 SGS-Thomson		
	25	CMOS					5	22		QS8780-25 ◊ Quality Semi (3613) MK41H80-25 SGS-Thomson		40
	35	CMOS					5	22		4180-35 † Motorola 62350-35 † Motorola 62351-35 † Motorola		
								22		MK41H80-35 SGS-Thomson		
	45	CMOS					5	22		4180-45 † Motorola 62350-45 † Motorola 62351-45 † Motorola		50
								24				
4Kx8x2	25	CMOS					5	28		UM6188-25 ◊ UMC		55
	35	CMOS					5	28		UM6188-35 ◊ UMC		
	45	CMOS					5	28		UM6188-45 ◊ UMC		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Cache Tag										(Cont'd)		
4Kx10	17	CMOS					5	68		MK45180-17 ◊* SGS-Thomson		5
	20	CMOS					5	68		MK45180-20 ◊* SGS-Thomson		
4Kx16	35	CMOS					5	44		V63C308-12 ◊ Vitelic		5
	45	CMOS					5	44		V63C308-11 ◊ Vitelic		
	55	CMOS					5	44		V63C308-10 ◊ Vitelic		
4Kx16x2	25	CMOS					5	52		CY7C183-25C ◊ Cypress		10
										CY7C184-25C ◊ Cypress		
										UM61168L-25 ◊ UMC		
	35	CMOS					5	52		CY7C183-35C ◊ Cypress		
								48		CY7C183-35M ◊† Cypress		
								52		CY7C184-35C ◊ Cypress		
								48		CY7C184-35M ◊† Cypress		
								52		UM61168L-35 ◊ UMC		
	45	CMOS					5	52		CY7C183-45C ◊ Cypress		
								48		CY7C183-45M ◊† Cypress		
4Kx18								52		CY7C184-45C ◊ Cypress		
										UM61168L-45 ◊ UMC		
	45	CMOS					5	48		CY7C184-45M ◊† Cypress		
	12	BiCMOS					5	68		CY7B180-12C Cypress (3432)		
										CY7B181-12C Cypress (3432)		
	15	BiCMOS					5	68		CY7B180-15C Cypress (3432)		
										CY7B181-15C Cypress (3432)		
	20	BiCMOS					5	68		CY7B180-20C Cypress (3432)		
										CY7B181-20C Cypress (3432)		
4Kx18x2		CMOS					5	52		TC55187-20 ◊ Toshiba		
										TC55188-20 ◊ Toshiba		
	25	CMOS					5	52		TC55187-25 ◊ Toshiba		
										TC55188-25 ◊ Toshiba		
	30	CMOS					5	52		TC55187-30 ◊ Toshiba		
										TC55188-30 ◊ Toshiba		
	25	CMOS					5	52		IS61C818-25 ISSI		
	35	CMOS					5	52		IS61C818-35 ISSI		
	45	CMOS					5	52		IS61C818-45 ISSI		
	8Kx8	9	BiCMOS	TTL	Separate	50	150	5	28		CY7B185-9 ◊ Aspen	
10		BiCMOS	TTL	Separate	45	45	5	28		CY7B185-10 ◊ Aspen		
12		BiCMOS	TTL	Separate	55	150	5	28		CY7B185-12 ◊† Aspen		
		CMOS	CMOS/TTL	Common	0.5	275	5	28	Cache-Tag	ATT7C173-12 ◊ AT&T (3398)		
						275	5	28	Cache-Tag	ATT7C174-12 ◊ AT&T (3398)		
15		CMOS	CMOS/TTL	Common	0.5	240	5	28	Cache-Tag	ATT7C174-15 ◊ AT&T (3398)		
			TTL	Common	35	125	5	28		ATT7C173-15 ◊ AT&T (3398)		
									P4C174-15C ◊ Performance			
17		CMOS					5	28		MK48S80-17 ◊ SGS-Thomson		
20		CMOS					5	28		IS61C81-20 ISSI		
										MK48H74-20 SGS-Thomson		
										MK48S74-20 ◊ SGS-Thomson		
										MK48S80-20 ◊ SGS-Thomson		
		CMOS/TTL	Common	0.5	185	5	28	Cache-Tag	ATT7C173-20 ◊ AT&T (3398)			
									ATT7C174-20 ◊ AT&T (3398)			
		TTL	COM	35	100	5	28		P4C174-20C ◊ Performance			
	25	CMOS					5	28		IS61C81-25 ISSI		
										MK48S80-25 ◊ SGS-Thomson		
										(Continued)		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Technology	I/O Compatibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line	
Static—Cache Tag										(Cont'd)			
8Kx8	25	CMOS	CMOS/TTL							(Cont'd)			
			Common	0.5	275	5	28	Cache-Tag	ATT77C173-25 ♦ AT&T (3398)				
					150	5	28	Cache-Tag	ATT77C174-25 ♦ AT&T (3398)				
		TTL	Common	35	100	5	28		P4C174-25C ♦ Performance				
	30	CMOS				5	28		IS61C81-30	ISSI			
35	CMOS				5	28		MK48S74-25 ♦ SGS-Thomson		5			
8Kx9	20	CMOS				5	28		IS61C89-20	ISSI			
	25	CMOS				5	28		IS61C89-25	ISSI			
	30	CMOS				5	28		IS61C89-30	ISSI			
8Kx16	20	CMOS								52	MT56C3816-20	MicronTech (3581)	10
			TTL	Common	120	220	5	52		MT56C0816-20	MicronTech		
	25	CMOS								52	IS61C816-25	ISSI	15
										52	MT56C3816-25	MicronTech (3581)	
									VT62A168	VLSI Tech	20		
	TTL	Common	120	220	5	52		MT56C0816-25	MicronTech				
	30	CMOS								52	V63C328-03 ♦ Vitelic (3742, 3747)	15	
											V63C329-03 ♦ Vitelic		
									V63C330-03 ♦ Vitelic (3742, 3747)				
	35	CMOS								52	IS61C816-35	ISSI	20
										52	MT56C3816-35	MicronTech (3581)	
									VT62A168-35 ♦ VLSI Tech				
								52	MT56C0816-35	MicronTech			
40	CMOS								52	V63C328-02 ♦ Vitelic (3742, 3747)	15		
										V63C329-02 ♦ Vitelic			
								V63C330-02 ♦ Vitelic (3742, 3747)					
45	CMOS								52	IS61C816-45	ISSI	25	
									52	V63C328-01 ♦ Vitelic (3742, 3747)			
								V63C329-01 ♦ Vitelic					
								V63C330-01 ♦ Vitelic (3742, 3747)					
								VT62A168-45 ♦ VLSI Tech					
8Kx18	20	CMOS								52	MT56C0818-20	MicronTech (3581)	30
											MT56C3818-20	MicronTech (3581)	
											QS8813-20 ♦ Quality Semi		
	24	CMOS								52	MT56C2818-24	MicronTech (3581)	35
	25	CMOS								52	MT56C0818-25	MicronTech (3581)	
											MT56C3818-25	MicronTech (3581)	
									QS8813-25 ♦ Quality Semi				
									VT62A188-25 ♦ VLSI Tech				
28	CMOS								52	MT56C2818-28	MicronTech (3581)	40	
35	CMOS								52	MT56C0818-35	MicronTech (3581)		
										MT56C3818-35	MicronTech (3581)		
								QS8813-35 ♦ Quality Semi					
								VT62A188-35 ♦ VLSI Tech					
8Kx20x2	17	CMOS								68	VT62A2016-17 ♦ VLSI Tech	45	
	20	CMOS								68	VT62A2016-20 ♦ VLSI Tech		
	25	CMOS								68	VT62A2016-25 ♦ VLSI Tech		
	30	CMOS								68	VT62A2016-30 ♦ VLSI Tech		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

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MEMORY—RAMs (Cont'd)

Organization	Max Access Time (ns)	Process Tech- nology	I/O Comp- atibility	Data I/O Config.	Max Standby Current (mA)	Max Active Current (mA)	Supply Voltage (V)	No. of Pins	Comments	Device	Source	Line
Static—Cache Tag										(Cont'd)		
16Kx4	8	BiCMOS	ECL	Separate		180	-5.2	24	10K/10KH ECL	CY10E494-8	Aspen	5
							-4.5	28	100K ECL	CY100E494-8	Aspen	
		-5.2	28	100K ECL	CY101E494-8	Aspen						
		TTL	Common	50	140	5	24	CY7B164-8	Aspen			
	CY7B166-8							Aspen				
	Separate	50	140	5	28	CY7B161-8	Aspen					
						CY7B162-8	Aspen					
	SY7B160-8	Aspen										
		10	BiCMOS	TTL	Separate	40	130	5	28	CY7B160-10	Aspen	10
	QS8883-12									Quality Semi (3613)		
P4C190-12C	Performance											
QS8883-15	Quality Semi (3613)											
P4C190-15C	Performance											
QS8883-20	Quality Semi (3613)											
20	CMOS	TTL	Common	35	125	5	24	P4C190-20C	Performance	15		
								QS8883-25	Quality Semi (3613)			
25	CMOS	TTL	COM	35	100	5	24	P4C190-25C	Performance			
16Kx5	20	CMOS					5	32	SN74ACT2163-20	TI		
16Kx16	15	CMOS	CMOS/TTL	Common	0.5	275	5	52	Latched Data I/O	ATT7C157-15	AT&T	20
										L7C157-20	LogicDev	
	20	CMOS	CMOS/TTL	Common	0.5	275	5	52	ATT7C157-20	AT&T (3396)		
	24	CMOS	CMOS/TTL	Common	0.5	200	5	52	L7C157-24	LogicDev		
									ATT7C157-24	AT&T (3396)		
	33	CMOS	CMOS/TTL	Common	0.5	175	5	52	L7C157-33	LogicDev	25	
									ATT7C157-33	AT&T (3396)		
	16Kx18	24	CMOS							IS61C618-24	ISSI	
										IS61C618-35	ISSI	
32Kx9	14	BiCMOS							CY7B173-14C	Cypress (3435)		
									CY7B174-14C	Cypress		
	18	BiCMOS							CY7B173-18C	Cypress (3435)	30	
									CY7B174-18C	Cypress		
	21	BiCMOS							CY7B173-21C	Cypress (3435)		
								CY7B174-21C	Cypress			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—Plug-In Cards

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
DRAM, 3Mx16, 60-Pin Two-Piece Type	MF13M1-M1CAP	Mitsubishi		EEPROM, 128Kx8, 60-Pin Two-Piece Type	MF8128-F1EAP	Mitsubishi		Mask ROM, 8Mx16, 60-Pin Two-Piece Type	MF78M1-F1FAP	Mitsubishi	
		(3584)				(3585)	30			(3585)	
DRAM, 8M (4Mx16 + 2 Parity), 60-Pin Two-Piece Type	DWE800CMD	Seiko Instr		Flash EEPROM, 32Kx8, 40-Pin Card-Edge	FEC032IECO	Seiko Instr		Mask ROM, 16Mx8/16Mx16, 68-Pin Two-Piece Type	MF716M-G1DAT	Mitsubishi	
					FPC032IECO	Seiko Instr				(3585)	
DRAM, 8Mx16, 60-Pin Two-Piece Type	MF18M1-M1AAP	Mitsubishi		Flash EEPROM, 64Kx8, 40-Pin Card-Edge	FEC064IECO	Seiko Instr		Mask ROM, 128Kx8, 40-Pin Card-Edge	MRC128IECO	Seiko Instr	
		(3584)			FPC064IECO	Seiko Instr					
DRAM, 8Mx36, 88-Pin Two-Piece Type	MF18M1-L28AT	Mitsubishi		Flash EEPROM, 128Kx8, 40-Pin Card-Edge	FEC128IECO	Seiko Instr		Mask ROM, 128Kx16, 50-Pin Card-Edge	MRC257HECO	Seiko Instr	
		(3584)			FPC128IECO	Seiko Instr	35				70
DRAM, 12Mx16, 60-Pin Two-Piece Type	MF112M-M1AAP	Mitsubishi		Flash EEPROM, 128Kx16, 50-Pin Card-Edge	FEC257HECO	Seiko Instr		Mask ROM, 256Kx8, 40-Pin Card-Edge	MRC256IECO	Seiko Instr	
		(3584)	5		FPC257HECO	Seiko Instr					
DRAM, 512Kx16, 60-Pin Two-Piece Type	MF1513-M1CAP	Mitsubishi		Flash EEPROM, 256Kx8/256Kx16, 68-Pin Two-Piece Type	MF8257-G1EAT	Mitsubishi		Mask ROM, 256Kx16, 50-Pin Card-Edge	MRC513HECO	Seiko Instr	
		(3584)				(3585)					
DRAM, 1M (512Kx16 + 2 Parity), 60-Pin Two-Piece Type	DWE100CMD	Seiko Instr		Flash EEPROM, 256Kx8, 40-Pin Card-Edge	FEC256IECO	Seiko Instr	40	Mask ROM, 256Kx16, 68-Pin Two-Piece Type	KWB513SD	Seiko Instr	
DRAM, 1Mx16, 60-Pin Two-Piece Type	MF11M1-M1CAP	Mitsubishi			FPC256IECO	Seiko Instr		Mask ROM, 512Kx8, 40-Pin Card-Edge	MRC512IECO	Seiko Instr	
		(3584)		Flash EEPROM, 256Kx16, 50-Pin Card-Edge	FEC513HECO	Seiko Instr					
DRAM, 1Mx18, 60-Pin Two-Piece Type	MF11M1-978AP	Mitsubishi			FPC513HECO	Seiko Instr		Mask ROM, 512Kx8, 50-Pin Card-Edge	MF7512-F2FAC	Mitsubishi	
		(3584)		Flash EEPROM, 512Kx8/512Kx16, 68-Pin Two-Piece Type	MF8513-G1EAT	Mitsubishi				(3585)	75
DRAM, 2Mx16, 60-Pin Two-Piece Type	MF12M1-M1CAP	Mitsubishi				(3585)		Mask ROM, 512Kx8, 60-Pin Two-Piece Type	MF7512-F1FAP	Mitsubishi	
		(3584)	10	Flash EEPROM, 512Kx8, 40-Pin Card-Edge	FEC512IECO	Seiko Instr				(3585)	
DRAM, 4M (2Mx16 + 2 Parity), 60-Pin Two-Piece Type	DWE400CMD	Seiko Instr			FPC512IECO	Seiko Instr	45	Mask ROM, 512Kx16, 50-Pin Card-Edge	MF7513-F2FAC	Mitsubishi	
DRAM, 4Mx16, 60-Pin Two-Piece Type	MF14M1-M1AAP	Mitsubishi		Flash EEPROM, 512Kx16, 50-Pin Card-Edge	FEC101HECO	Seiko Instr				(3585)	
		(3584)			FPC101HECO	Seiko Instr		Mask ROM, 512Kx16, 60-Pin Two-Piece Type	MF7513-F1FAP	Mitsubishi	
DRAM, 4Mx18, 60-Pin Two-Piece Type	MF14M1-978AP	Mitsubishi		Flash EEPROM, 1Mx8/1Mx16, 68-Pin Two-Piece Type	MF81M1-G1EAT	Mitsubishi				(3585)	80
		(3584)				(3585)		Mask ROM, 512Kx16, 68-Pin Two-Piece Type	KWB101SD	Seiko Instr	
DRAM, 4Mx36, 88-Pin Two-Piece Type	MF14M1-L28AT	Mitsubishi		Flash EEPROM, 1Mx8, 40-Pin Card-Edge	FEC100IECO	Seiko Instr	50	Mask ROM, 1Mx8/1Mx16, 68-Pin Two-Piece Type	MF71M1-G1DAT	Mitsubishi	
		(3584)			FPC100IECO	Seiko Instr				(3585)	
EEPROM, 192Kx8, 60-Pin Two-Piece Type	MF8192-F1EAP	Mitsubishi		Flash EEPROM, 2Mx8/2Mx16, 68-Pin Two-Piece Type	MF82M1-G1EAT	Mitsubishi		Mask ROM, 1Mx8, 40-Pin Card-Edge	MRC100IECO	Seiko Instr	
		(3585)	15			(3585)					
EEPROM, 8Kx8, 40-Pin Card-Edge	EEO08IECO	Seiko Instr		Flash EPROM, 256Kx8/128Kx16, 68-Pin Two-Piece Type	MB98A8081-20	Fujitsu		Mask ROM, 1Mx8, 50-Pin Card-Edge	MF71M0-F2FAC	Mitsubishi	
	EEO08IENO	Seiko Instr				(3481)				(3585)	
EEPROM, 8Kx8, 60-Pin Two-Piece Type	MF808A-F1EAP	Mitsubishi		Flash EPROM, 512Kx8/256Kx16, 68-Pin Two-Piece Type	MB98A8091-20	Fujitsu		Mask ROM, 1Mx8, 60-Pin Two-Piece Type	MF71M0-F1FAP	Mitsubishi	
		(3585)				(3481)	55			(3585)	
EEPROM, 8Kx16, 68-Pin Two-Piece Type	QWB017SD	Seiko Instr			MB98A8092-20	Fujitsu		Mask ROM, 1Mx16, 50-Pin Card-Edge	MF71M1-F2FAC	Mitsubishi	
				Flash EPROM, 1Mx8/512Kx16, 68-Pin Two-Piece Type	MB98A8102-20	Fujitsu				(3585)	85
EEPROM, 16Kx8, 40-Pin Card-Edge	EEO016IECO	Seiko Instr				(3482)		Mask ROM, 1Mx16, 60-Pin Two-Piece Type	MF71M1-F1FAP	Mitsubishi	
	EEO016IENO	Seiko Instr		Flash EPROM, 1Mx8/512Kx16, 68-Pin Two-Piece Type	MB98A8101-20	Fujitsu				(3585)	
EEPROM, 16Kx8, 60-Pin Two-Piece Type	MF816A-F1EAP	Mitsubishi				(3481)		Mask ROM, 1Mx16, 68-Pin Two-Piece Type	KWB201SD	Seiko Instr	
		(3585)	20	Flash EPROM, 2Mx8/1Mx16, 68-Pin Two-Piece Type	MB98A8112-20	Fujitsu					
EEPROM, 16Kx16, 68-Pin Two-Piece Type	QWB033SD	Seiko Instr				(3482)		Mask ROM, 2Mx8/2Mx16, 68-Pin Two-Piece Type	MF72M1-G1DAT	Mitsubishi	
				Flash EPROM, 2Mx8/1Mx16, 68-Pin Two-Piece Type	MB98A8111-20	Fujitsu				(3585)	
EEPROM, 32Kx8, 40-Pin Card-Edge	EEO032IECO	Seiko Instr				(3481)		Mask ROM, 2Mx8, 40-Pin Card-Edge	MRC200IECO	Seiko Instr	
	EEO032IENO	Seiko Instr		Flash EPROM, 4Mx8/2Mx16, 68-Pin Two-Piece Type	MB98A8122-20	Fujitsu					90
EEPROM, 32Kx8, 60-Pin Two-Piece Type	MF832A-F1EAP	Mitsubishi				(3482)	60	Mask ROM, 2Mx8, 50-Pin Card-Edge	MF72M0-F2FAC	Mitsubishi	
		(3585)		Mask ROM, 2AMx8, 60-Pin Two-Piece Type	MF72M0-F1FAP	Mitsubishi				(3585)	
EEPROM, 64Kx8, 40-Pin Card-Edge	EEO064IECO	Seiko Instr				(3585)		Mask ROM, 4Mx16, 50-Pin Card-Edge	MF72M1-F2FAC	Mitsubishi	
EEPROM, 64Kx8, 60-Pin Two-Piece Type	MF864A-F1EAP	Mitsubishi		Mask ROM, 8Mx8/8Mx16, 68-Pin Two-Piece Type	MF78M1-G1DAT	Mitsubishi				(3585)	
		(3585)	25			(3585)		Mask ROM, 2Mx16, 60-Pin Two-Piece Type	MF72M1-F1FAP	Mitsubishi	
EEPROM, 128Kx8, 40-Pin Card-Edge	EEO128IECO	Seiko Instr		Mask ROM, 8Mx8, 50-Pin Card-Edge	MF78M0-F2FAC	Mitsubishi				(3585)	
						(3585)		Mask ROM, 2Mx16, 68-Pin Two-Piece Type	KWB401SD	Seiko Instr	
				Mask ROM, 8Mx8, 60-Pin Two-Piece Type	MF78M0-F1FAP	Mitsubishi					95
						(3585)	65				
				Mask ROM, 8Mx16, 50-Pin Card-Edge	MF78M1-F2FAC	Mitsubishi					
						(3585)					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—Plug-In Cards (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line	Function	Device	Source	Line
Mask ROM, 4Mx8/4Mx16, 68-Pin Two-Piece Type	MF74M1-G1DAT	Mitsubishi		OTP ROM, 256Kx8, 40-Pin Card-Edge	EPC256IECO	Seiko Instr		OTP ROM, 4Mx8, 60-Pin Two-Piece Type	MF44M0-F1EAP	Mitsubishi	
	(3585)								(3584)		
Mask ROM, 4Mx8, 40-Pin Card-Edge	MRC400IECO	Seiko Instr		OTP ROM, 256Kx8, 50-Pin Card-Edge	MF4256-F4EAC	Mitsubishi		OTP ROM, 4Mx16, 50-Pin Card-Edge	MF44M1-F2EAC	Mitsubishi	60
					(3584)				(3584)		
Mask ROM, 4Mx8, 50-Pin Card-Edge	MF74M0-F2FAC	Mitsubishi		OTP ROM, 256Kx8, 60-Pin Two-Piece Type	MF4256-F3EAP	Mitsubishi	35	OTP ROM, 4Mx16, 60-Pin Two-Piece Type	MF44M1-F1EAP	Mitsubishi	
	(3585)				(3584)				(3584)		
Mask ROM, 4Mx8, 60-Pin Two-Piece Type	MF74M0-F1FAP	Mitsubishi		OTP ROM, 256Kx16, 50-Pin Card-Edge	MF4257-F4EAC	Mitsubishi		SRAM, 320Kx16, 40-Pin Two-Piece Type	AWA641JS10	Seiko Instr	
	(3585)				(3584)						
Mask ROM, 4Mx16, 50-Pin Card-Edge	MF74M1-F2FAC	Mitsubishi	5		EPC513HECO	Seiko Instr		SRAM, 8Kx8, 40-Pin Card-Edge	RBC008IE00	Seiko Instr	
	(3585)			OTP ROM, 256Kx16, 60-Pin Two-Piece Type	MF4257-F3EAP	Mitsubishi					
Mask ROM, 4Mx16, 60-Pin Two-Piece Type	MF74M1-F1FAP	Mitsubishi			(3584)			SRAM, 16Kx8, 40-Pin Card-Edge	RBC016IE00	Seiko Instr	
	(3585)			OTP ROM, 512Kx8/512Kx16, 68-Pin Two-Piece Type	MF4513-G1EAT	Mitsubishi					
Mask ROM, 4Mx16, 68-Pin Two-Piece Type	KWB801SD	Seiko Instr			(3584)			SRAM, 32Kx8, 40-Pin Card-Edge	RBC032IE10	Seiko Instr	65
Memory Card Controller for PCMCIA and JEIDA Standards.	MB86301	Fujitsu		OTP ROM, 512Kx8, 40-Pin Card-Edge	EPC512IECO	Seiko Instr	40				
OTP ROM, Unprogrammed, 32Kx8, 40-Pin Card-Edge	BPC032IECO	Seiko Instr		OTP ROM, 512Kx8, 50-Pin Card-Edge	MF4512-F4EAC	Mitsubishi		SRAM, 32Kx8, 50-Pin Card-Edge	MF332A-MBDAC	Mitsubishi	
					(3584)				(3583)		
OTP ROM, Unprogrammed, 32Kx16, 50-Pin Card-Edge	BPC065HECO	Seiko Instr	10	OTP ROM, 512Kx8, 60-Pin Two-Piece Type	MF4512-F3EAP	Mitsubishi		SRAM, 32Kx8, 60-Pin Two-Piece Type	MF332A-MADAP	Mitsubishi	
					(3584)				(3583)		
OTP ROM, Unprogrammed, 64Kx8, 40-Pin Card-Edge	BPC064IECO	Seiko Instr		OTP ROM, 512Kx16, 50-Pin Card-Edge	MF4513-F4EAC	Mitsubishi		SRAM, 32Kx16, 50-Pin Card-Edge	RBC065HE10	Seiko Instr	
	BPC064IENO	Seiko Instr			(3584)						
OTP ROM, Unprogrammed, 64Kx16, 50-Pin Card-Edge	BPC129HECO	Seiko Instr		OTP ROM, 512Kx16, 60-Pin Two-Piece Type	MF4513-F3EAP	Mitsubishi	45	SRAM, 32Kx16, 68-Pin Two-Piece Type	LWB065SD	Seiko Instr	70
					(3584)						
OTP ROM, Unprogrammed, 128Kx8, 40-Pin Card-Edge	BPC128IECO	Seiko Instr		OTP ROM, 1Mx8/1Mx16, 68-Pin Two-Piece Type	MF41M1-G1EAT	Mitsubishi		SRAM, 64Kx8/64Kx16, 68-Pin Two-Piece Type	MF365A-L2DAT	Mitsubishi	
					(3584)				(3583)		
OTP ROM, Unprogrammed, 128Kx16, 50-Pin Card-Edge	BPC257HECO	Seiko Instr	15	OTP ROM, 1Mx8, 40-Pin Card-Edge	EPC100IECO	Seiko Instr		SRAM, 64Kx8, 40-Pin Card-Edge	RBC064IE10	Seiko Instr	
				OTP ROM, 1Mx8, 50-Pin Card-Edge	MF41M0-F2EAC	Mitsubishi					
OTP ROM, Unprogrammed, 256Kx8, 40-Pin Card-Edge	BPC256IECO	Seiko Instr			(3584)			SRAM, 64Kx8, 50-Pin Card-Edge	MF364A-M7DAC	Mitsubishi	
				OTP ROM, 1Mx8, 60-Pin Two-Piece Type	MF41M0-F1EAP	Mitsubishi	20		(3583)		
OTP ROM, Unprogrammed, 256Kx16, 50-Pin Card-Edge	BPC513HECO	Seiko Instr			(3584)			SRAM, 64Kx8, 60-Pin Two-Piece Type	MF364A-M6DAP	Mitsubishi	
				OTP ROM, 1Mx8, 50-Pin Card-Edge	MF41M0-F2EAC	Mitsubishi			(3583)		
OTP ROM, Unprogrammed, 512Kx8, 40-Pin Card-Edge	BPC512IECO	Seiko Instr			(3584)			SRAM, 64Kx8, 68-Pin Two-Piece Type	MB98A9060-20	Fujitsu	75
				OTP ROM, 1Mx8, 60-Pin Two-Piece Type	MF41M0-F1EAP	Mitsubishi					
OTP ROM, Unprogrammed, 512Kx16, 50-Pin Card-Edge	BPC101HECO	Seiko Instr			(3584)			SRAM, 64Kx16, 40-Pin Two-Piece Type	AWA129JS10	Seiko Instr	
				OTP ROM, 1Mx16, 50-Pin Card-Edge	MF41M1-F2EAC	Mitsubishi	50				
OTP ROM, Unprogrammed, 1Mx8, 40-Pin Card-Edge	BPC100IECO	Seiko Instr			(3584)			SRAM, 64Kx16, 50-Pin Card-Edge	MF365A-M7DAC	Mitsubishi	
				OTP ROM, 1Mx16, 60-Pin Two-Piece Type	MF41M1-F1EAP	Mitsubishi			(3583)		
OTP ROM, 32Kx8, 40-Pin Card-Edge	EPC032IECO	Seiko Instr			(3584)						
OTP ROM, 32Kx16, 50-Pin Card-Edge	EPC065HECO	Seiko Instr		OTP ROM, 2Mx8/2Mx16, 68-Pin Two-Piece Type	MF42M1-G1EAT	Mitsubishi		SRAM, 64Kx16, 60-Pin Two-Piece Type	MF365A-M6DAP	Mitsubishi	
					(3584)				(3583)		
OTP ROM, 64Kx8, 40-Pin Card-Edge	EPC064IECO	Seiko Instr		OTP ROM, 2Mx8, 50-Pin Card-Edge	MF42M0-F2EAC	Mitsubishi	25	SRAM, 64Kx16, 68-Pin Two-Piece Type	AWB129JS10	Seiko Instr	80
	EPC064IENO	Seiko Instr			(3584)				LWB128SD	Seiko Instr	
OTP ROM, 64Kx16, 50-Pin Card-Edge	EPC129HECO	Seiko Instr		OTP ROM, 2Mx8, 60-Pin Two-Piece Type	MF42M0-F1EAP	Mitsubishi		SRAM, 128Kx8/128Kx16, 68-Pin Two-Piece Type	MF3129-L2DAT	Mitsubishi	
					(3584)				(3583)		
OTP ROM, 128Kx8, 40-Pin Card-Edge	EPC128IECO	Seiko Instr		OTP ROM, 2Mx16, 50-Pin Card-Edge	MF42M1-F2EAC	Mitsubishi		SRAM, 128Kx8, 40-Pin Card-Edge	RBC128IE10	Seiko Instr	
					(3584)						
OTP ROM, 128Kx8, 50-Pin Card-Edge	MF4128-F4EAC	Mitsubishi		OTP ROM, 2Mx16, 60-Pin Two-Piece Type	MF42M1-F1EAP	Mitsubishi	30	SRAM, 128Kx8, 50-Pin Card-Edge	MF3128-M7DAC	Mitsubishi	
	(3584)				(3584)				(3583)		
OTP ROM, 128Kx8, 60-Pin Two-Piece Type	MF4128-F3EAP	Mitsubishi		OTP ROM, 4Mx8/4Mx16, 68-Pin Two-Piece Type	MF44M1-G1EAT	Mitsubishi		SRAM, 128Kx8, 60-Pin Two-Piece Type	MF3128-M6DAP	Mitsubishi	
	(3584)				(3584)				(3583)		
OTP ROM, 128Kx16, 50-Pin Card-Edge	MF4129-F4EAC	Mitsubishi		OTP ROM, 4Mx8, 50-Pin Card-Edge	MF44M0-F2EAC	Mitsubishi	55	SRAM, 128Kx16, 50-Pin Card-Edge	MF3129-M7DAC	Mitsubishi	
	(3584)				(3584)				(3583)		
	EPC257HECO	Seiko Instr									
OTP ROM, 128Kx16, 60-Pin Two-Piece Type	MF4129-F3EAP	Mitsubishi									
	(3584)										
OTP ROM, 256Kx8/256Kx16, 68-Pin Two-Piece Type	MF4257-G1EAT	Mitsubishi									
	(3584)										

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

MEMORY—Plug-In Cards (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
SRAM, 128Kx16, 60-Pin Two-Piece Type MF3129-M6DAP	Mitsubishi	(3583)		SRAM, 2Mx8, 50-Pin Card-Edge MF32M0-M7DAC	Mitsubishi	(3583)	30
SRAM, 128Kx16, 68-Pin Two-Piece Type AWB257JS10 LWB257SD	Seiko Instr Seiko Instr			SRAM, 2Mx8, 60-Pin Two-Piece Type MF32M0-M6DAP	Mitsubishi	(3583)	
SRAM, 256Kx8/256Kx16, 68-Pin Two-Piece Type MF3257-L2DAT	Mitsubishi	(3583)		SRAM, 2Mx16, 50-Pin Card-Edge MF32M1-M7DAC	Mitsubishi	(3583)	
SRAM, 256Kx8, 40-Pin Card-Edge RBC256IE11	Seiko Instr		5	SRAM, 2Mx16, 60-Pin Two-Piece Type MF32M1-M6DAP	Mitsubishi	(3583)	
SRAM, 256Kx8, 50-Pin Card-Edge MF3256-M7DAC	Mitsubishi	(3583)					
SRAM, 256Kx8, 60-Pin Two-Piece Type MF3256-M6DAP	Mitsubishi	(3583)					
SRAM, 256Kx8, 68-Pin Two-Piece Type MB98A9080-20	Fujitsu	(3483)					
SRAM, 256Kx16, 50-Pin Card-Edge MF3257-M7DAC	Mitsubishi	(3583)	10				
RBC513HE12	Seiko Instr						
SRAM, 256Kx16, 60-Pin Two-Piece Type MF3257-M6DAP	Mitsubishi	(3583)					
SRAM, 256Kx16, 68-Pin Two-Piece Type AWB513JS10 LWB513SD	Seiko Instr Seiko Instr						
SRAM, 512Kx8/512Kx16, 68-Pin Two-Piece Type MF3513-L2DAT	Mitsubishi	(3583)					
SRAM, 512Kx8, 40-Pin Card-Edge RBC512IE13	Seiko Instr		15				
SRAM, 512Kx8, 50-Pin Card-Edge MF3512-M7DAC	Mitsubishi	(3583)					
SRAM, 512Kx8, 60-Pin Two-Piece Type MF3512-M6DAP	Mitsubishi	(3583)					
SRAM, 512Kx8, 68-Pin Two-Piece Type MB98A9090-20	Fujitsu	(3483)					
SRAM, 512Kx16, 50-Pin Card-Edge MF3513-M7DAC	Mitsubishi	(3583)	20				
RBC101HE10	Seiko Instr						
SRAM, 512Kx16, 60-Pin Two-Piece Type MF3513-M6DAP	Mitsubishi	(3583)					
SRAM, 512Kx16, 68-Pin Two-Piece Type LWB101SD	Seiko Instr						
SRAM, 1Mx8/1Mx16, 68-Pin Two-Piece Type MF31M1-L2DAT	Mitsubishi	(3583)					
SRAM, 1Mx8, 40-Pin Card-Edge RBC100IE10	Seiko Instr						
SRAM, 1Mx8, 50-Pin Card-Edge MF31M0-M7DAC	Mitsubishi	(3583)	25				
SRAM, 1Mx8, 60-Pin Two-Piece Type MF31M0-M6DAP	Mitsubishi	(3583)					
SRAM, 1Mx16, 50-Pin Card-Edge MF31M1-M7DAC	Mitsubishi	(3583)					
SRAM, 1Mx16, 60-Pin Two-Piece Type MF31M1-M6DAP	Mitsubishi	(3583)					
SRAM, 2Mx8/2Mx16, 68-Pin Two-Piece Type MF32M1-L2DAT	Mitsubishi	(3583)					

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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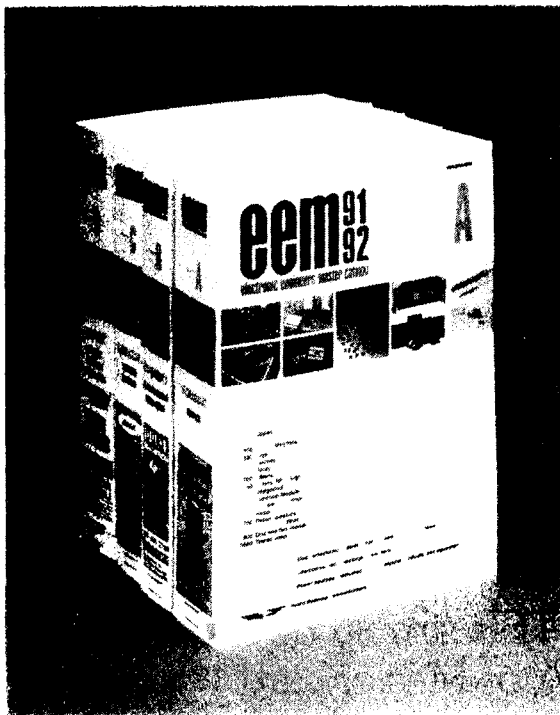
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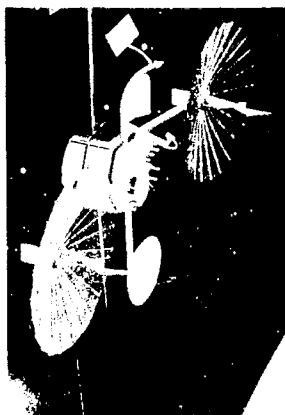
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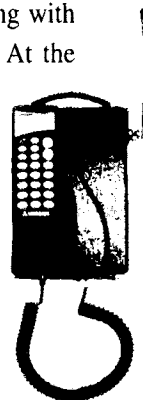


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INTRODUCTION TO ASIC/CUSTOM CIRCUITS

This section describes ASIC/Custom products and services. It shows interrelationships, covering the devices and manufacturers' capabilities as well as the design tools for use by OEM engineers and system designers. The first guide lists custom capabilities. The subsequent guides cover devices and the specific tools that can be applied.

For more detailed information on devices and tools you can review the manufacturer-supplied technical data.

Category

- Capabilities Charts**

- Gate Arrays**

- Linear and Linear/Digital Arrays**

- Standard Cells**

- Gate Array Design Automation Tools**

- Linear and Linear/Digital Design Automation Tools**

- Standard Cell Design Automation Tools**

IC MASTER

ASIC/CUSTOM

Manufacturer	ABB HAFO	Advanced Linear Devices	Advanced Micro Devices
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital, combined digital/linear	Linear, combined linear/digital	
Gate Array			Programmable Array Logic
Chip Density Range (equiv. gates)	Up to 10,000 gates		200 to 800
Cell Library	Metal- or silicon-gate CMOS, silicon-gate CMOS/SOS	CMOS	CMOS
Design Kit Available		Yes	Yes
Full Custom Circuits Digital	Silicon-gate CMOS, metal-gate CMOS, silicon-gate CMOS/SOS (radiation hardened)		
Linear	Silicon-gate CMOS, metal-gate CMOS, silicon-gate CMOS/SOS (radiation hardened)	Silicon-gate CMOS	
Combined Digital Linear	Silicon-gate CMOS, metal-gate CMOS, silicon-gate CMOS/SOS (radiation hardened)	Silicon-gate CMOS	
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Verified netlist, test vectors, logic diagram, circuit diagram, PG tape, black box.	Circuit diagram, block diagram, circuit inputs and outputs bread-board	
Design Aids	Schematic entry, circuit simulation, design rule checks, test program generation.	Macrocell, circuit simulation, hardware kit part simulation, design rule checks. SPICE based ASIC verification simulation library.	AMPALASM-20 software for Boolean equation generation. AMPLPL software provides similar capability for advanced products.
Production	In-house	Procured and in-house	In-house
Preferred Delivered Product	Wafers, dice packaged test units	Packaged ceramic and plastic DIPs, leadless chip carriers, dice.	Ceramic and plastic DIPs, leadless chip carriers, dice; all available in commercial and military
Test Program Generation	Yes	Yes	
Production Test	Functional, parametric, MIL: burn-in, environmental	Functional, parametric, burn-in, thermal shock, environmental	100% dc, ac and functional testing; burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	LTX, Sentry VII, Teradyne VLSI Tester.	Industry standard and custom test systems	Xincom, Accutest
Comments	Standard cell libraries for various workstations, quality level to MIL 883C Level S	Supply voltage range: 1V to 12V Standard cells are also standard products PSPICE software simulation Kit Part hardware simulation	Commercial programmers available. Software output JEDEC PLDTF. Most complex programmable logic parts available.

Manufacturer	Allegro Micro Systems	Analog Devices	Applied Micro Circuits
FOR DETAILED DATA SEE:			
Customized Standard Circuits		Linear	
Gate Array		From customer-owned-tooling	ECL and BiCMOS
Chip Density Range (equiv. gates)			800 to 28,000
Cell Library		Standard parts available in chip form	ECL, BiCMOS, mixed ECL, and TTL
Design Kit Available		Kit parts	Yes
Full Custom Circuits Digital	Silicon-gate CMOS, NMOS, metal-gate CMOS	TTL, LSTTL, ISL, I ² L, ECL, ISO/CMOS Si-gate, BiCMOS	BiCMOS- 1.0 micron and 1.5 micron BiPolar- 1.0, 1.5, 2.0, and 3.0 micron up to 224 signal pin test capability
Linear	Silicon-gate CMOS, NMOS	20, 40, 60V supply voltage Bipolar, Complementary Bipolar, CMOS	
Combined Digital Linear	Silicon-gate NMOS, CMOS	I ² L, ECL, TTL, LSTTL, BiCMOS	Same as Digital
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Minimum of functional diagram, breadboard, pattern generator tape or database tape	Customer-owned-tooling (pattern generator tape, composite drawing), known good device schematics, performance specs	a) Database tape & vectors - customer designed.; b) Schematics & vectors for full turnkey design.
Design Aids	Logic simulator assistance, bread- board assistance, design rule checks	Kit parts CAD, SPICE evaluation parts	Full design kit support on Dazix, Mentor, Valid, Cadence, Lasar
Production	In-house	In-house; 4" lines	4" wafers up to 3 levels of metal (ALCu 1%); In-house FAB
Preferred Delivered Product	No preference	Mapped wafers, probed wafers, packaged units	1) Packaged & tested finished goods. 2) Tested/probed wafers.
Test Program Generation	Yes	Yes	Yes
Production Test	Full screening available including burn-in and full environmental screening	Functional, parametric, burn-in, thermal shock, environmental, MIL, linear	Sentry 10 & 21 120 pintesters Trillium Gate Master 224 pins.
Electrical Test Systems Available	Sentry VII, Sentinel, Teradyne	LTX, F-5000, LTS2020	IMS
Comments	Capabilities include: design layout, CAP, mask shop, wafer fabrication assembly, and test	Ion implantation, dual layer metaliza- tion, nitride passivation, thin film resistors, MIL 38510 qualified; laser trimming, radiation hardening	Offers contact design service thru authorized third party design companies.

ASIC/CUSTOM (Cont'd)

Manufacturer	Aptek Microsystems	AT&T	ATMEL
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, Digital, combined Digital/Linear	Digital	Digital
Gate Array			Poly Silicon-gate CMOS
Chip Density Range (equiv. gates)		1,000 to 15,000 2-input gates	4,000 to 157,000
Cell Library		ECL	CMOS
Design Kit Available			Yes
Full Custom Circuits Digital	Silicon- or metal-gate CMOS, NMOS, PMOS, Bipolar		Yes CMOS
Linear	CMOS, Bipolar, Switched capacitor filters	Complementary bipolar, CMOS, bipolar (dielectric isolation), BCDMOS	Yes CMOS
Combined Digital Linear	Yes	I ² L, bipolar/MOS (dielectric isolation), CMOS	Yes CMOS
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Logic diagram, circuit diagram, functional specification, breadboard	Functional diagram, schematic, specification, breadboard.	Netlist, schematic, VHDL description
Design Aids	Circuit simulation, logic simulation, schematic entry, test program generation, breadboard assistance complete CAD system, design rule checks, engineering assistance.	CAD assistance, linear simulation, engineering and breadboard assistance	Design manuals; functional and timing simulation, design rule checks
Production	Wafer production procured from outside foundries. Testing and packaging done in-house.	In-house	In-House; MIL-STD-883C certified sub-contractors, off-shore sub-contractors
Preferred Delivered Product	Dual-in-line package, chip carriers, hybrid package	Probed wafers or packaged dice	Packaged tested units; military or commercial specifications
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, environmental, burn-in	Functional, parametric, burn-in, environmental	Functional (up to 80 MHz); AC/DC parametric; burn-in, MIL-STD-883C, Class B screening.
Electrical Test Systems Available	HP based test system	LTX, AT&T Stetzler (bipolar)	ANDO (various models); Sentry (all)
Comments	Independent design center, access to multiple foundries. In-house multi-chip hybrid capability.	Wafer fabrication services, products include 30 and 90 volt linear arrays, microwave arrays.	Custom and Tab Packaging available

ASIC/CUSTOM (Cont'd)

Manufacturer	Avasem Corp.	Bipolar Integrated Technology	Cherry Semiconductor
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital/analog		Digital, linear, combined digital/linear
Gate Array			I ² L, LSI ² L, ECL and other bipolar
Chip Density Range (equiv. gates)			64 to 256 gates
Cell Library	Silicon-gate CMOS, digital and analog		I ² L, ECL and other bipolar
Design Kit Available	Yes		Yes
Full Custom Circuits Digital	Silicon-gate CMOS and NMOS, logic and memory, non-volatile memory	High Density Bipolar	I ² L, ECL and other bipolar
Linear	Silicon-gate CMOS and NMOS, CCD, switched capacitor filters	Bipolar	Bipolar only
Combined Digital Linear	CMOS	Bipolar	I ² L, ECL and other bipolar
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Logic diagram, circuit diagram, functional specification, bread-board	Functional specs, logic diagram, circuit diagram, database tape	Circuit diagram, logic diagram, bread-board, functional spec
Design Aids	In house: Calma GDS II, VAX11/780 and Mentor	Logic simulation, design rule check, electrical rule check, cell library	Logic simulation, breadboard assistance, design rule checks, simulation models
Production	Procured	In-house Fab, test and packaging	In-house
Preferred Delivered Product	As requested	Wafers or packaged units	Packaged dice, flip chips
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric	Functional, ac and dc parametric	All except military
Electrical Test Systems Available		MegaTest, IMS	Teradyne J259, A311, A312, A3602, A370, A510
Comments	Independent design center, multiple sources, design aids	State of the art VLSI Bipolar Fabrication process	Dice can be solder-bump flip chips with nitride passivation; packaged dice can be delivered from COT for full custom.

ASIC/CUSTOM (Cont'd)

Manufacturer	California Micro Devices	Comlinear	Dionics
FOR DETAILED DATA SEE:			
Customized Standard Circuits		Yes	Linear
Gate Array	2 μ and 3 μ silicon-gate CMOS		
Chip Density Range (equiv. gates)	500 to 10,000		
Cell Library	1.5 μ silicon gate CMOS		No
Design Kit Available	Daisy, Mentor, Viewlogic		Yes
Full Custom Circuits Digital	1.5 μ to 5 μ silicon gate CMOS		
Linear	Silicon gate CMOS, double poly available		High and low voltage Bipolar, DMOS, Dielectric Isolation, Optoelectronic Arrays
Combined Digital Linear	ADV-CMOS		
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Netlist, Calma tapes, PG tapes, masks, logic diagrams	Functional specification	Circuit schematic, circuit function specifications, breadboard
Design Aids	Design rule checks, logic simulation	Computer simulation	
Production	In-house	In-house or procured	In-house wafer Fab and test; in-house Hi Rel packaging - Procured masks and plastic packaging
Preferred Delivered Product	Packaged die, probed wafers, mapped wafers	Packaged circuit, printed card mounted units, hybrid circuits	Chips, plastic and side brazed dips
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in optional	Functional, burn-in, thermal shock, linear, MIL	Functional, parametric
Electrical Test Systems Available	Sentry, LTX, Tektronix	Complete time domain and frequency domain testing from dc to 18 GHz	Sentry series 81
Comments		Specialities include amplifiers with extremely wide bandwidth and fast settling time, fast sample-and-hold and A/D conversion products. Is a MIL-STD qualified facility.	Hybrid circuit capability in-house

MASTER SELECTION GUIDE

ASIC/CUSTOM (Cont'd)

Manufacturer	Elantec	Exar	Fujitsu
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear	Digital, linear, combined digital/linear	Digital
Gate Array			Silicon-gate CMOS, ECL, BiCMOS, GaAs
Chip Density Range (equiv. gates)			200 to 200,000 (CMOS), 2,500 to 16,000 (BiCMOS), 1,000 to 40,000 (ECL) and 3,800 to 30,000 (GaAs)
Cell Library		I ² L, Si-gate CMOS, linear bipolar	Silicon-gate, CMOS, ECL, BiCMOS and GaAs. Memory macros and Supermacro functions.
Design Kit Available	Kits parts	Yes	Yes
Full Custom Circuits Digital		Metal-gate CMOS, I ² L, Si-gate CMOS	Silicon-gate, CMOS, ECL, BiCMOS and GaAs.
Linear	Complementary Bipolar, DI, JI	Bipolar, CMOS	No
Combined Digital Linear		I ² L, other Bipolar, CMOS	No
Provide Design Assistance	yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Performance Spec : Schematic	Database tapes, complete layout, breadboard, circuit diagram, logic diagram, functional diagram, standard cell netlist	Logic simulation, timing verification, logic design rule check and Test Logic data and test timing data (Fujitsu format)
Design Aids	SPICE Models Kits Parts	Logic simulation, breadboard assistance, design rule checks, cell libraries, design manual; schematic capture, simulation, layout on IBM PC/AT standard cell-mentor	Logic simulation, timing verification, logic design/Test data rule check. Third party libraries for Dazix, Mentor, Valid, Viewlogic, Cadence, Verilog-XL, Synopsys. Proprietary CAD systems includes ViewCad, and Cell compiler CellCAD.
Production	In-house	In-house	In-house
Preferred Delivered Product	Probed and sorted wafers; Packaged parts	Packaged devices, dice, dice in wafer form, wafers	Packaged dice
Test Program Generation	yes	Yes	Automatic
Production Test	Functional, parametric DC & AC, Burn-in, Environmental	Functional, parametric, environmental, burn-in, 883C	Functional, ac and dc parametric
Electrical Test Systems Available	LTX model77 AC test - 16 Mhz	Fairchild 5000, Teradyne J273, A311, A312, A360, A360D, A370, Sentry 10, 20, EPRO 140, EPRO 210 and 8832 Loadstar	In-house
Comments	MIL-STD-883; Rad Hard; Zener Zap	2 micron CMOS, 30 analog cells; 30 EEPROM cells; 120 digital cells	Auto placement and routing performed by proprietary CAD. Manual place and route available through Gate Ensemble; Gate utilization up to 90% on channelled arrays and 60% on channelless arrays.

ASIC/CUSTOM (Cont'd)

Manufacturer	Gennum	GigaBit Logic	Gould AMI
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear and combined digital/linear	GaAs, Digital, Analog, Memory	Digital, linear, combined digital/linear
Gate Array			1.25 μ m and 2 μ m silicon-gate CMOS
Chip Density Range (equiv. gates)	Linear bipolar 100-479	50 to 15,000	1000 to 100K 2-input gates (gate array), to 15,000 (standard cell)
Cell Library	Common circuit block and micro cells	SC5000, SC10000 (E/D)	Yes
Design Kit Available	Yes	Yes	Yes
Full Custom Circuits Digital		Depletion Mode, Enhancement/ Depletion Mode (E/D), 0.8 μ m MESFET GaAs	Silicon-gate CMOS with high-voltage output capability, up to 60V
Linear	Yes		Silicon-gate CMOS, filter, amplifier to rf
Combined Digital Linear	TL, I ² L, some linear functions	Yes	Silicon-gate NMOS, CMOS, 14-bit resolution, VHF-rf
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Pencil connected layout, logic diagram spec, PG tape, circuit diagram and breadboard, reticles	Calma GDSII tape, cell library schematic, block diagram	Layout database, PG tape, validated netlist, semi-validated netlist, functionally validated netlist, unvalidated netlist, logic diagram, functional specifications, masks
Design Aids	Design rule checks, CAD, circuit simulation, design manual, bread board parts, layout sheets, seminar, proto-chips.	Comprehensive design rules and manuals; ERC, DRC, LVS, SPICE simulation, logic simulation, cell libraries, prototype tools	Expert-based design software services to optimize and speed designs, including netlist conversions
Production	In-house	In-house	In-house
Preferred Delivered Product	Packaged dice, bare dice, probed wafers	Wafers, die, or packaged units	DIP, plastic chip carriers, SOIC packages, wafers, die to commer- cial or military specifications
Test Program Generation	Yes	Yes	Yes, Automatic Test Generation
Production Test	Functional, parametric, environmen- tal	Functional (less than 10 MHz), high speed (less than 3 GHz)	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	Industry standard tester, custom tester	MegaTest, IMS, custom high speed, ASIX	Sentry, Teradyne, Xicom, LTX, General Radio
Comments	Complete in-house services; design layout, PG, masking, wafer fabrica- tion, assembly, test, Q.A.	All customer-interface levels supported. Guaranteed high speed performance to customer specifi- cations.	Complete custom capability including design, instruction, cell library licensing

ASIC/CUSTOM (Cont'd)

Manufacturer	Harris Semiconductor	Harris Microwave Semiconductor	Hitachi
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital, linear, combined digital/linear	GaAs Analog (MMIC)	Digital, Gate Array, Standard Cell, Customer owned tooling
Gate Array	1.2 μ Silicon-Gate CMOS		1.0 μ and 0.8 μ CMOS ; 1.3 μ BiMOS
Chip Density Range (equiv. gates)	Up to 30,000 (CMOS) (Rad Hard)		CMOS up to 250k gates; BiCMOS up to 14k gates ; with TTL and/or ECL I/O
Cell Library	1.2 μ silicon-gate CMOS; Silicon Compiler- 1.2 μ silicon-gate CMOS		HG62 G/S 0.8 μ CMOS; HG62 E/F 1.0 μ CMOS; HG29 A/M; HG 22T 1.3 μ CMOS
Design Kit Available	Yes	Yes	Yes, Training Course
Full Custom Circuits			
Digital	Metal-gate and silicon-gate CMOS silicon-gate PMOS, LSTTL, ALSTTL, STTL, N ² L.		Customer owned tooling 1.0 μ and 0.8 μ CMOS
Linear	Bipolar (dielectric isolation); metal-gate CMOS/bipolar; silicon-gate CMOS.	Selective ion implantation into GaAs substrates employing 0.5 and 1.0 micron gate lengths.	Limited Functions
Combined Digital Linear	Silicon-Gate CMOS; Bipolar, BiCMOS, BiMOS		Digital with limited analog macros
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Logic diagram, logic database, Calma masks; database	Calma GDS tape, SCD, part specification	Verified Netlist, PG Tape, Circuit Diagram and specifications
Design Aids	Proven cell library macros, logic simulation, layout programs and test grading, parasitic extraction, logic to layout verification	Comprehensive design rule manuals	Training course and manuals; software for simulation, ERC, Timing Analysis, Fault Simulation, Automatic Test Pattern Generation if using Hitachi Autodiagnosis design; Works with all popular workstations
Production	In-house	Completely vertically integrated in-house	Japan
Preferred Delivered Product	Wafer, packaged dice, scribed dice, and packaged devices	Wafers, die, packaged units	Packaged parts
Test Program Generation	Yes, CAD Supported	Offered as option	Yes
Production Test	Up to and including equivalent class S military flow; also in-house total dose radiation testing	Up to and including equivalent class S military flow, vector and scalar on- or off-wafer up to 26.5 GHz	Functional, parametric, burn-in, thermal cycle
Electrical Test Systems Available	Sentry, IMS, Trillium	HP8510, HP8409, cascable microwave on-wafer probe, Keithly 5900	Sentry, AdvanTest
Comments	Also offer low voltage CMOS; radiation hardening for most process technologies; also provides silicon foundry	Merchant supplier of GaAs products and services with a major strength in the military and high reliability areas. Complete custom capability as well as semicustom and foundry.	Alternate source to VLSI Standard Cell 1.5 μ , 1.0 μ

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ASIC/CUSTOM (Cont'd)

Manufacturer	Holt Integrated Circuits	Honeywell	Hughes
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, digital, combined linear/digital	Digital	Digital, Linear, EEPROM combinations
Gate Array	Metal-gate 5 μ CMOS; 3.0 μ , 2.0 μ standard cell silicon gate CMOS	1.2 μ , 2-level metal CMOS-III; 1.2 μ , 0.8 μ 2-level metal R1CMOS-III.	Silicon-gate CMOS DLM 2 μ and 1.5 μ gate arrays
Chip Density Range (equiv. gates)	80 to 2,000	60,000	Up to 15,000 gates (gate array); up to 40,000 gates (standard cells)
Cell Library	Metal-gate CMOS; silicon-gate CMOS	Boundary/Internal Scan; VHSIC Testability Protocols	1.5 and 2 μ silicon-gate CMOS DLM; 3 μ silicon-gate CMOS 1 level metal, Analog, EEPROM
Design Kit Available	Yes	Mentor	Yes (Mentor)
Full Custom Circuits Digital	Single and double poly silicon-gate CMOS metal-gate CMOS	CMOS Gate Arrays, Rad Hard Arrays, TTL Replacement parts	3 μ , 1.5 and 2 μ silicon-gate DLM
Linear	Single and double poly; silicon-gate, metal-gate CMOS		Standard cells, Si-gate CMOS, 2 μ and 3 μ Low and High Voltage Double Poly SCF Process
Combined Digital Linear	Metal-gate CMOS, silicon-gate CMOS		Standard cells, Si-gate CMOS, 2 μ and 3 μ and EEPROM
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Any	Netlist, GDS2 Database RTL VHDL description	Verified netlist, circuit diagram and specs, database tape with simulation, test vectors, and bonding diagrams, GDS-II Layout.
Design Aids	Logic simulation, breadboard assistance, DRC, ERC.	VDS Tool kit, including proven macro-cell library, logic simulation, static timing analyzer. Design for a test methodologies provided; ATPG available, VHDL	Supports Mentor Graphics Workstations
Production	In-House	In-House	In-House fab and test, in-house and procured masks and packaging
Preferred Delivered Product	Packaged devices	Packaged Devices	Packaged units in DIPs, LCC, PGA, probed wafers or dice, flatpacks
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, thermal shock, environmental, MIL, SEM	Functional, 100% dc, and selected ac parameters, MIL-STD-883C and Class B, and modified Class S screening	AC and DC functional and parametric, voltage/frequency corners
Electrical Test Systems Available	Eagle LSI-4, plus IEEE-488 Analog instrumentation, IT-200, In-House Analog/Digital Tester	Sentry; ANDO	LTX, Sentry Series, Sentinel, Advantest/Takeda-Riken
Comments		High-performance CMOS Gate Arrays; Strategic Radiation Hardened R1CMOS-III process; VHSIC built-in self-test (BIST) testability protocols	Complete standard cell and gate array compatibility; applications support; in-house mask shop; manufacturing and assembly; second source LSI Logic for Gate Arrays

Manufacturer	Hyundai	IC DESIGNS	ILC Data Device
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Yes	CMOS 1.25 and 2 μ m silicon-gate	Digital, linear, power
Gate Array	CMOS		
Chip Density Range (equiv. gates)	880–85,000 usable gates	Up to 5,000 gates (2 μ); up to 15,000 gates (1.25 μ m)	
Cell Library	Yes	1.25 μ m and 2 μ m silicon-gate CMOS, 2 metal. Digital and Analog	
Design Kit Available	Yes	Yes	
Full Custom Circuits Digital			Bipolar, CMOS
Linear			Bipolar
Combined Digital Linear		Standard cells, silicon-gate CMOS, 2 μ m and 1.25 μ m	Bipolar, CMOS
Provide Design Assistance		Yes	Yes
Acceptable Customer Input (in order of preference)		Verified netlist, circuit diagram, specs, and simulation vectors	Logic diagram, circuit diagram, test vectors, functional specifications
Design Aids	Turn-Key Service	IC Works-proprietary desktop ASIC design system for PC-AT	
Production	In-House	Via proprietary foundry relationship	In-house
Preferred Delivered Product	Packaged Devices, Dice	Packaged units (DIPs, PLCC, PGA); wafers or dice	Packaged units
Test Program Generation	Yes	Yes	Yes
Production Test	Yes	AC and DC functional and parametric	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	Sentry, Trillium	Sentry Series, Sentinel	Custom equipment
Comments		Cell library, design tools and foundry services all available from single supplier.	New packaging technology and materials enable DDC to develop power hybrids with typical power dissipation of 100 watts, and are capable of handling typical currents of 50 amperes with low junction-to-case thermal resistance.

ASIC/CUSTOM (Cont'd)

Manufacturer	Integrated Circuit Systems	Integrated Logic Systems	International Microcircuits
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital, linear, combined digital/linear		Digital
Gate Array	CMOS	1.5 micron CMOS—double-level metal	Silicon- or metal-gate CMOS
Chip Density Range (equiv. gates)	65,000	1,000 to 100,000	75 to 16,000
Cell Library	Metal-gate CMOS, Silicon-gate CMOS	Full 7400 series, user definable ROM, RAM, PLA is standard cell density; 2900 family	Yes
Design Kit Available	No	Daisy, Mentor, OrCAD	Yes
Full Custom Circuits Digital	Metal-gate or silicon-gate CMOS, double level metal or poly, EE, high voltage, low voltage	Yes	
Linear	CMOS		
Combined Digital Linear	CMOS		
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	No minimum required. Full turn-key service available	Simulated schematic or functional description	Functional spec, logic diagram, circuit diagram, test vectors, PG tape and netlist
Design Aids	Full design capability including schematic capture, analog and digital simulation, layout tools, data base verification, and test program generation.	Schematic capture, logic simulation, automated R-C extraction, timing verification, design rule checking, electrical rule checking, auto place and route, customer training, design center	Logic simulation, design rule check; Daisy and Mentor CAE capabilities + PC Based
Production	Yes	Procured wafer production	In-house and procured
Preferred Delivered Product	Packaged parts, dice or chips on board available	Packaged dice available in commercial and military	Scribed dice, packaged dice wafers + special pkgs.
Test Program Generation	Yes	Automated test program generation	Yes
Production Test	Yes	95% fault coverage typical, 100% dc/ac and functional testing; burn-in military reliability	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	Megatest, Sentry	Sentry XXI, IMS	Genrad, Sentry
Comments	Since ICS purchases wafers from several foundries, it has the flexibility to choose the optimum process for an application. Second sourcing is straight-forward.	Gate array architecture offering complex functions with standard cell density; full scan path test program generation and fault grading; available in commercial and military	100% burn-in, Mil spec manufacturing in line

ASIC/CUSTOM (Cont'd)

Manufacturer	International Microelectronics Products	IXYS	Lansdale Semiconductor
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital		Digital, Bipolar, Memories
Gate Array	yes		
Chip Density Range (equiv. gates)	2,000 to 65,000		
Cell Library	No		
Design Kit Available	No		
Full Custom Circuits Digital	Silicon-gate NMOS and CMOS	Power control, Motion control, Industrial control and Telecommunications related circuits	ECL, LS, TTL, DTL, RTL, Bipolar, SUHL
Linear	Si-Gate CMOS	Power control, Motion control, Industrial control and Telecommunications related circuits	Yes
Combined Digital Linear	Silicon-gate NMOS and CMOS	Power control, Motion control, Industrial control and Telecommunications related circuits	
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Test vectors, customer-owned-tooling (pattern-generator tape, composite drawing)	Specifications, circuit diagrams, netlist	PG tape, mask, functional specs, schematic capture, circuit diagram
Design Aids	Schematic capture, digital/analog simulation, place and route, DRC, ERC, LVS.		Design rule checks
Production	In-house	Included	In-house wafer fabrication
Preferred Delivered Product	Mapped wafers, probed wafers, scribed dice, packaged dice, or special packages.	Packaging ICs in standard plastic, ceramic or SMD	Packaged tested dice, wafers
Test Program Generation	Yes	Included	Yes
Production Test	Functional, parametric, burn-in	Included	Functional, parametric
Electrical Test Systems Available	Sentry, Trillium, LTX, Kiethly		
Comments			

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Lattice	Logical Solutions	LSI Computer Systems
FOR DETAILED DATA SEE:			
Customized Standard Circuits		Digital, testable functional	
Gate Array	E ² CMOS Generic Array Logic	1.5 μ and 2 μ silicon-gate CMOS	
Chip Density Range (equiv. gates)	300 to 500 gates	1,000 to 50,000	
Cell Library	Electrically Erasable CMOS	Yes	
Design Kit Available			
Full Custom Circuits Digital	Electrically Erasable CMOS	Silicon-gate CMOS	Metal-gate PMOS, CMOS, silicon-gate NMOS, silicon gate CMOS
Linear			Metal-gate PMOS, CMOS, silicon-gate CMOS
Combined Digital Linear			Metal-gate PMOS, CMOS, Silicon-gate CMOS
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Device Master, Jedec Fuse Map, Logic Equations, State Machine, Truth Tables, Schematic Entry, Wave Form	Logic diagram	Logic diagram, customer-owned tooling (pattern-generation tape, composite drawing), circuit diagram, breadboard, functional specification
Design Aids	PLD Development Software.	Testability advisor	Design rule checks, computer aided transient analysis, Applicon 760
Production	Procured	Sub-contracted	Procured
Preferred Delivered Product	Plastic and Ceramic DIPs, PLCC, LCC	DIP, PCC, SOIC, Wafers, ceramic leaded and leadless packages, die to commercial and military specifications	Packaged dice, dice
Test Program Generation	Yes	Yes	Yes
Production Test	Programmability, Functional, Parametric, AC.	Functional, parametric, burn-in, thermal shock, environmental, military	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	Sentry, Impact	Sentry	Macrodata107 and customized equipment
Comments	Programmers Available	Will license patented testability circuit architecture for inclusion in customer devices	Multiple-sourced production

ASIC/CUSTOM (Cont'd)

Manufacturer	LSI Logic	Marconi Circuit Technology	MCE
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital		Linear, digital, combined linear/digital, bipolar, CMOS
Gate Array	Silicon-gate HCMOS, BiCMOS	Silicon on sapphire	CMOS, ECL, dielectric isolation, I ² L, Linear
Chip Density Range (equiv. gates)	300 to 100,000	700 to 20,000	50 to 10,000
Cell Library	7400/4000 CMOS and HCMOS, 500 cells includes 2900 series, 8200, 6800, multipliers, adders, DSP cells, etc.	Silicon on Sapphire	Yes
Design Kit Available	9-day class	Yes	Yes
Full Custom Circuits Digital		Silicon on sapphire	CMOS, TTL, LSTTL, I ² L, ECL, linear
Linear		Silicon on sapphire	Up to 75 volts
Combined Digital Linear		Yes	Up to 20 volts
Provide Design Assistance	Over 37 LSI design centers	Yes	Yes
Acceptable Customer Input (in order of preference)		Netlist and simulation vectors, post layout, full turnkey	MCE will interface with customer anywhere in design sequence; UniDES software
Design Aids	LSI Logic design system, including design entry, circuit simulation, logic simulation, floorplanning, design synthesis and compilation, multi-chip simulation, behavioral simulation; workstation tools for Sun, Apollo, Mentor and Digital	Mentor, Dazix, Intergraph Design Systems	Logic simulation, breadboard assistance, design rule checks, UniDES
Production	In-House, on-shore, Europe, Japan, Canada	In-house	In-house manufacturing; 4-inch wafer fabrication
Preferred Delivered Product	Packaged dice, dice	Packaged Devices, Dice	Mapped wafers; probed wafers; scribed dice; substrate-mounted dice; packaged dice; custom packaging
Test Program Generation	Yes, automatic	Yes	Yes
Production Test	Functional test to full test vector set; AC critical path; full parametric test Level B and S screening	Up to Mil-STD-883C Level 'S'	Functional; parametric
Electrical Test Systems Available	Industry standard testers, Sentry Series 10,20, Ando 256 pin 40 MHz, Trillium 256-pin (512-pin in development)	Sentry	Teradyne J273 and A300 with laser trim; Pragmatic Inspector 200 (72 pin digital IC); Keithley 300
Comments	Multiple sourced; over 37 LSI design centers	Full Radiation-Hardened Product Range; Second Source; Secure Design Centre	Functional arrays available CMOS MGA and SGA series; also linear function cells

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Micrel	Micro Linear	Micro Power Systems
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Combined CMOS/DMOS linear/digital	Analog and analog/digital semicustom with some arrays.	2,000 digital, linear and digital/linear cells
Gate Array		Bipolar tile array	
Chip Density Range (equiv. gates)		500 to 3,000 analog components	Up to 10,000 gates
Cell Library	Yes	Macrocells available	CMOS, bipolar, with BiMOS with thin film resistors
Design Kit Available		No	Yes
Full Custom Circuits Digital	PMOS, CMOS, DMOS, NMOS silicon or metal-gate, isopolar type processing		Moly gate CMOS, bipolar, BiMOS, all compatible with thin film resistors
Linear	Bipolar, CMOS, DMOS	Yes	High gain/low current analog bipolar, CMOS, BiMOS with thin film resistor; (10 ohms to megohms)
Combined Digital Linear	Up to 200 volts	Yes	CMOS digital/linear bipolar digital/linear BiMOS digital/linear all compatible with thin film resistors
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Customer owned tooling, PG tape, database tape; circuit logic, functional specifications	Schematic diagram, CAD schematic with simulations, GDSII tape	Circuit logic diagrams, functional specifications, customer owned tooling, PG tapes, database tapes, breadboards
Design Aids	Design rule checks, Calma CAD, breadboard, logic simulation, circuit simulation	Engineering support, Viewlogic workstation	Cooperative design, logic/circuit diagrams, Calma CAD, workstation based, and design tools
Production	In-house wafer fabrication; 4-inch lines. Procured assembly	In-house and procured	In-house wafer fabrication, two second sources
Preferred Delivered Product	Packaged tested die, probed wafers, mapped wafers	Dice or packaged units	Customer specified: wafers, die, final test, custom and standard packages available
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, MIL STD 883. Rad hard Class B,S	Functional, parametric, burn-in, full MIL-STD-883C	Functional, parametric, burn-in, environmental, linear, full MIL STD 883, rad hard
Electrical Test Systems Available	Sentry VII, Series 20	Sentry, Tera dyne	Custom testers, BTS, Datatron, Fairchild, LTS, Macrodata
Comments	Bipolar-linear, CMOS, DMOS power devices combined; 60V, 100V, 200V; 3 μ CMOS Si-gate dual poly; 1 GHz DMOS power FET	12 volt / 40 volt mixed signal tile arrays and semi-standard	Combination CMOS and bipolar, 1 to 5V CMOS, 1 to 200 + V bipolar, 2-micron 250 MHz CMOS (Flash-MOS); bipolar linear combined with digital CMOS and thin film resistors (HallMOS)

Manufacturer	Micro-Rel	Mitel Corp.	Mitsubishi Electronics
FOR DETAILED DATA SEE:			
Customized Standard Circuits		N/A	Digital
Gate Array		N/A	1.0 μ , 1.3 μ , 2.0 μ silicon-gate CMOS
Chip Density Range (equiv. gates)	500–10,000 gates (2-input NAND)	N/A	200 to 50,000 2-input NAND
Cell Library	Silicon-gate CMOS	N/A	CMOS
Design Kit Available	Yes	N/A	Yes
Full Custom Circuits Digital	Silicon-gate CMOS	2.0 μ double layer metal p-well CMOS	
Linear	Silicon-gate CMOS, bipolar, BiMOS	2.0 μ double layer poly, two layer metal p-well CMOS	
Combined Digital Linear	Silicon-gate CMOS, BiMOS	2.0 μ double layer poly, two layer metal p-well CMOS	
Provide Design Assistance	Yes	Yes	
Acceptable Customer Input (in order of preference)	Logic or circuit diagram, functional specification, breadboard, database tape	Functional specification, logic diagram, circuit schematics, or CAD interface	Netlist and test vectors, schematic using macrocell and test vectors, schematic and test vector or timing diagram.
Design Aids	Logic and circuit simulation, kit parts available for linear bipolar design, schematic entry, DRC, ERC, LVS, LPE	Logic simulation, design verification, SPICE, post layout checks	Circuit simulation, logic simulation, schematic entry, test program generation, design rule checks, fault simulation
Production	In-house	In-house	In-house
Preferred Delivered Product	Packaged devices, hybrid modules	Wafers, probed wafers, scribed wafers, packaged/tested devices	Packaged
Test Program Generation	Yes	Yes	Automatic
Production Test	MIL STD, DESC 1772 certified	Functional parametric, burn-in, thermal shock, environmental, MIL linear	Functional, parametric, burn-in standard
Electrical Test Systems Available	Sentry 7, Series 80	LTX DX89, DX90	Mitsubishi in-house tester, Ando.
Comments	Radiation-hardened bipolar circuits available	Complete standard cell and macrocell array family available, specializing in linear and telecommunication circuits, second source: IMP	Gate isolation; compatible with standard cell macrolibrary

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Motorola	National Semiconductor	NCM Corporation
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital	Digital	Linear, digital, combination
Gate Array	HCMOS, ECL, TTL-LS	ECL, 2 μ silicon-gate CMOS	CMOS (si-gate, metal-gate), bipolar
Chip Density Range (equiv. gates)	Up to 6,000 gates (gate arrays); up to 10,000 gates (standard cells)	ECL: 500 to 2,000 3-input NAND; CMOS: 500 to 6,000 2-input NAND	What ever is feasible
Cell Library	Extensive digital, analog, functional block, μ P core	Yes	Yes
Design Kit Available	Training course, manuals	Yes	No
Full Custom Circuits Digital	NMOS, CMOS, ECL, TTL-LS, FAST	Implemented in gate array format ECL or 2 μ CMOS	CMOS (Si-gate, metal-gate), bipolar, PMOS (si-gate, metal-gate)
Linear	Standard cells- HCMOS functional blocks		CMOS (si-gate, metal-gate), bipolar
Combined Digital Linear	Standard cells- HCMOS functional blocks		CMOS (si-gate, metal-gate), bipolar
Provide Design Assistance	21 Design Support Centers	Yes	Yes
Acceptable Customer Input (in order of preference)	CAD interface, verified netlist, circuit documentation.	Logic diagram to PG tape - depending on customer interface required	Functional specs, logic diagram, circuit diagram, breadboard, test vectors, customer-owned-tooling, known good devices
Design Aids	Training course and manuals, software for simulation, timing analysis and test programs; popular engineering workstations	Logic simulation, breadboard assistance, design rule checks. FairCAD design system provides full design capability.	Logic simulation, breadboarding, design rule check, cell library
Production	High volume production; in-house fab, assembly and test	In-house	Procured
Preferred Delivered Product	Choice of packages- DIPs, PLCC, PGA, LCC for surface mount or thru board mount	Packaged die preferred	Packaged units, dice, probed wafers, pc assemblies
Test Program Generation	Yes, evaluation and production	Yes	Yes
Production Test	100% ac and dc parametric and functional	Functional parametric to MIL 883B	Functional, parametric, burn-in, thermal cycle
Electrical Test Systems Available	Sentry Series, Sentinel, Trillium up to 256 I/O	In-house	In-house built, microcomputer-controlled test systems
Comments	Complete standard cell and macrocell array families with mapability of designs; second source: NCR	High performance ECL and 2 μ silicon-gate CMOS gate arrays in volume production	Chips as large as 522x1068 mils have been successfully manufactured

ASIC/CUSTOM (Cont'd)

Manufacturer	NCR Microelectronics	NEC Electronics	Newbridge Microsystems
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital, linear mixed-signal, μ C, memory, combinations	Digital, μ P, Memory, Combined Digital/Linear	Linear, digital, memory, 8000 series peripherals, 8085 μ P
Gate Array	Si-gate- CMOS DLM, .7 μ L-effective, .95 μ drawn. Si-gate CMOS DLM, 1.1 μ L-effective, 1.5 μ drawn	CMOS, ECL, BiCMOS	
Chip Density Range (equiv. gates)	Up to 70,000 gates (gate array); up to 100,000 gates (standard cell)	CMOS: up to 177,000 gates; ECL: up to 35,000 gates; BiCMOS: up to 24,000 gates	CMOS up to 25,000 gates, Bipolar up to 2,000 gates
Cell Library	2 μ Si-gate CMOS DLM; 1.1 μ L-effective, 1.5 μ drawn CMOS, DLM, compilers, supercells, analog μ P, 74xx, 82xx	Extensive digital, analog, RAM, ROM, 74LS, 82XX, many mega macros	Yes
Design Kit Available	Training course, manuals, license	Yes, Training Manuals	Yes
Full Custom Circuits Digital	Same as gate array and cell library sections above	1.5 μ m CMOS 1.0 μ m CMOS standard cells	CMOS, Bipolar and standard cell
Linear	Same as above		Bipolar
Combined Digital Linear	Same as above	Si-gate CMOS standard cells; 1.5 μ m and 1.2 μ m	Limited
Provide Design Assistance	25 Design Centers worldwide	7 U.S. Design Centers	Yes
Acceptable Customer Input (in order of preference)	Verified netlist, circuit diagram and specs, database tape	Logic data and test vectors; verified netlists	Functional specifications and test description, logic schematic, circuit schematic, netlist
Design Aids	Training course and manuals, software for simulation, timing analysis and test programs, popular engineering workstations	Design kits for most EWS; training courses, detailed manuals; local engineering support	Software logic simulation, timing verification, design rule checks (DRC), test programs, real chip modelling, cell library, auto-routing layout software
Production	In-house fab and test, in-house packaging	In-House; U.S. and Japan fabrication	QA & Test In-house
Preferred Delivered Product	Packaged units in CDIP, PDIP, QFP (metric) PLCC (J-lead), LCC (J-lead), LCC (leadless) SOIC, PPGA, CPGA, Cerquad FP, SMT.	Packaged dice; offer DIP, Flat, PGA, LCC in most popular sizes	Packaged parts, dice, probed wafers
Test Program Generation	Yes	Yes	Yes
Production Test	AC and DC functional and parametric, voltage/frequency corners	Functional, DC, AC, 100% burn-in	Functional and parametric. Can also do burn-in and thermal cycling mil screening available
Electrical Test Systems Available	Sentry Series, Sentinel, Trillium	Ando	Sentry series, and in-house testers
Comments	Complete standard cell and gate array compatibility; applications support; Design Centers; in-house; manufacturing and assembly; full line of tools for industry standard workstations. Tools assist board-level as well as ASIC-level simulation.	Broad line of processes, products and packages. Offer one-stop shopping as an ASIC vendor.	CAD software runs on sun, apollo, DEC and PC/AT. Most Intel 8xxx functions available as macro cells, STD cell libraries.

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	OnChip Systems	Proxim, Inc.	Qualcomm
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, linear/digital	Yes, and Combined Digital & Linear	Linear, Digital, Combined
Gate Array	Bipolar, Analog CMOS	Si CMOS and GaAs	
Chip Density Range (equiv. gates)	Bipolar; to 800 components, Analog CMOS: to 1000 Gates.	As Rec'd to over 50,000	10,000-40,000
Cell Library	Yes	No	
Design Kit Available	No	No	NO
Full Custom Circuits Digital	CMOS Si gate and Metal Gate GaAs.	Yes, For DDS NCMO Designs	CMOS, ECL, TTL
Linear	Analog CMOS, Bipolar, CMOS Si gate and Metal Gate High Speed Bipolar and GaAs	Yes, For DDS NCMO Designs	
Combined Digital Linear	Analog CMOC, CMOS Si gate and Metal Gate, GaAs	Yes, For DDS NCMO Designs	BICMOS
Provide Design Assistance	Yes	Yes, under contracts	
Acceptable Customer Input (in order of preference)	Schematic w/functional specs;Block Diagram;Concept	System Specification; Functional requirements; On-site consultation	
Design Aids	Internal Design manual & design rules ISS system layout, DRC, LVS, digitizing Simulation (SPICE) Breadboard	Application notes papers & conference reports CAD analysis tools	
Production	Procured, multiple sources for each process.	Outside Foundries, Testing & Design In-House	Wafer production procured from outside foundries
Preferred Delivered Product	Packaged - DIP,SOIC,SMT; Die - Wafers, Waffle packs	Packaged circuits, Boards & Sub-system Modules	Packaged devices, die
Test Program Generation	Part of development	Yes	Yes
Production Test	Functional, parametric, mil screening available Temperature testing available	Outside service support of all needs	Functional and Parametric; MIL screening available
Electrical Test Systems Available	Pragmatic test heads. Custom built systems.	Yes, all standards	
Comments	Prefer turnkey designs with active involvement at the system level.	State-of-art digital freq. generation & precision with complex modulability; mil & com'l screening and classified projects	In-house VLSI design capability for forward error correction and frequency synthesis ASICs.

Manufacturer	Raytheon Semiconductor	S-MOS Systems	Seattle Silicon
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, digital	Digital	
Gate Array	Bipolar digital, ECL	Silicon-gate CMOS	
Chip Density Range (equiv. gates)	800 to 20,440	400 to 10,000	
Cell Library	TTL	Basic cells and MSI Macros	
Design Kit Available	Yes	Yes	
Full Custom Circuits Digital	Consult factory (bipolar)	Si-gate CMOS	Cell-based silicon-gate CMOS
Linear	Bipolar		Silicon-gate CMOS
Combined Digital Linear	Consult factory (bipolar)		Silicon-gate CMOS
Provide Design Assistance	Yes		Yes
Acceptable Customer Input (in order of preference)	TEGAS netlist, circuit schematics, physical database program	Netlist, P.G. tape, schematic	Workstation logic diagram
Design Aids	Evaluation devices, design source manual, factory tutorial, Schematic Entry, circuit simulation, design rule checks	Schematic entry, circuit simulation, logic simulation, design and electrical rule checks	Library of parts, place and route, back annotate simulation models for Mentor and Valid; logic synthesis and timing analysis
Production	Yes	In-house	Procured
Preferred Delivered Product	Packaged units, dice	Any	Packaged units
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, thermal shock, environmental, MIL	Functional, parametric	Functional, parametric, burn-in
Electrical Test Systems Available	Sentry 7, Sentry Series 21	Takeda-Riken	Sentry
Comments	Radiation tolerance test data available		Automated design system for multiple processes using custom cell- generators, full CAD and simulation support

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	SemTech	SGS-THOMSON	Siemens
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, Combined digital/linear	Digital/linear	
Gate Array		Silicon-gate analog/digital, silicon-gate high voltage	CMOS sea-of-gates, CMOS cell-based custom
Chip Density Range (equiv. gates)			Up to 300,000 available gates
Cell Library	Yes	100 to 1,200 gates	Digital, Soft Analog, PLL
Design Kit Available	No	Yes	Daisy, Mentor, Valid, Viewlogic
Full Custom Circuits Digital		Silicon-gate CMOS/DMOS, 500V dielectric isolation	
Linear	Bipolar	Same as above	
Combined Digital Linear	Bipolar	Same as above	
Provide Design Assistance	Yes	Same as above	Yes
Acceptable Customer Input (in order of preference)	Functional specs, circuit diagram, breadboard, samples	Schematic I/O requirements, functional specs, breadboard, test vectors, customer-owned-tooling, known good device	Verified netlist, circuit diagram, specs, schematics, GDSII
Design Aids	SPICE, breadboarding, design rule check	Daisy/VAX, Spice 2G, transient analysis, Daisy Logician logic simulation, Daisy Gatemaster place and route	Design manual, DRC, timing analysis, Daisy, Mentor, Valid, Viewlogic, Verilog, Synopsys, MACH 1000, LASAR6
Production	In-house fab and test	In-house wafer fab	Fab-Germany, test and assembly—Santa Clara, Germany, or Far East
Preferred Delivered Product	Packaged units, dice, assemblies	Wafer, dual-in-line packages, chip carriers	PQFP, ceramic PGAs, DIPs, PGAs, chip carriers, PLCCs
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, thermal cycle	Functional, parametric burn-in, thermal shock, environmental	AC and DC functional and parametric
Electrical Test Systems Available	Teradyne test systems	Custom high voltage test system, LTX	Advantest, Sentry
Comments		Dielectric isolation allows simultaneous integration of HV p- and n-channel transistors, IGTs, bipolar devices, and standard CMOS; design centers available	Full computer/design center, Engineering Staff, test and assembly in Santa Clara

Manufacturer	Sierra Semiconductor	Signal Processing Technologies	Signetics
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Analog telecomms/datacomms and EEPROM	Linear	Digital
Gate Array			Silicon-gate CMOS, ECL 100K and 10K compatibility (0.5ns), ISL- 48mA drive TTL compatible
Chip Density Range (equiv. gates)	Over 100,000 gates		330 to 1,100 Si-gate-CMOS; 600 to 2,200-ECL; Up to 2500 used gates -Flexx Array
Cell Library	CMOS with analog and EEPROM		Silicon-gate CMOS, TTL and LSTTL-Si-gate CMOS; Macrocell library-ECL; Full library of soft & hard macros-Flexx Array
Design Kit Available	Montage		Yes
Full Custom Circuits			
Digital	CMOS 1.0 μ		No* Yes, using the Flexx Array as foundation
Linear	CMOS 1.0, 1.5, 2.0, and 3.0 μ		
Combined Digital Linear	CMOS 1.0, 1.5, 2.0 and 3.0 μ		
Provide Design Assistance	Yes		Yes
Acceptable Customer Input (in order of preference)	CIF or GDS II database, simulated netlist, schematic and specification, block diagram and specification		Schematic input
Design Aids	Complete design tools: Montage schematic capture and mixed signal simulation, layout, custom design		Schematic capture, complete simulation, auto place, auto route, auto test generation
Production	6-inch		In-house
Preferred Delivered Product	Wafers, die or packaged units		Packaged units
Test Program Generation	Yes		Yes
Production Test	Functional, parametric, burn-in		Functional, parametric and ac
Electrical Test Systems Available	Sentry Series 80, Megatest, Teradyne A500, STS, AS20		Sentry VII, VIII, and 21, Takeda Riken system
Comments	Specialize in converters PLL's Video DACs		*Standard cells from 200 to 2,000 gates

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Silicon General	Silicon Systems	Sipex-HSD
FOR DETAILED DATA SEE:			
Customized Standard Circuits		Analog/digital	Digital, combined digital/linear
Gate Array			2–5 μ silicon-gate CMOS, Bi-CMOS (bipolar and CMOS)
Chip Density Range (equiv. gates)			100 to 10,000 2-input gates
Cell Library		Analog/digital standard cells and compiled macros	CMOS, BiCMOS
Design Kit Available		No	Yes
Full Custom Circuits Digital	CMOS, BiCMOS	Silicon gate CMOS, bipolar, BiCMOS TTL, STL, SRTL, LSTTL, ECL, I ² L	Silicon-gate CMOS, HCMOS, HMOS, BiCMOS
Linear	Yes, Bipolar	Silicon gate CMOS, bipolar, BiCMOS	Silicon-gate CMOS, HCMOS, BiCMOS
Combined Digital Linear	Yes	Silicon gate CMOS, bipolar, TTL, SRTL, I ² L, STL	Silicon-gate CMOS, HCMOS, BiCMOS
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Yes	Functional specification, logic diagram, circuit diagram, breadboard, test vectors	Logic diagram, circuit diagram, breadboard, functional specification, test vectors, COT, known good device
Design Aids	On Site	Breadboards, logic and circuit simulation, design rule checks, test-program development, auto place, auto route	Circuit simulation, logic simulation, schematic entry, test program generation, design rule checks, breadboard assistance
Production	In-house	In-house	In-house, procured
Preferred Delivered Product	Fully Packaged, Dice	Packaged units and tested dice	Packaged devices, others available
Test Program Generation	Yes	Yes	Yes
Production Test	Yes	Automatic testers for analog and digital devices, functional and parametric	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	Yes	LTX, Teradyne Trillium	Sentry, Teradyne
Comments			Complete custom capability including design, instruction, CAD and technology licensing. Standard cell library available.

ASIC/CUSTOM (Cont'd)

Manufacturer	Solltron Devices	Standard Microsystems Corp.	STC Components
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Bipolar linear, power linear, smart power	Digital, combined digital/linear, memory, μ C	Digital, combined digital/linear, linear, memory
Gate Array			Bipolar
Chip Density Range (equiv. gates)		50 to 10,000	10 to 15,000
Cell Library	Yes	Silicon-gate NMOS, CMOS	CMOS, Bipolar, merged CMOS/bipolar
Design Kit Available	Yes	Yes	Yes
Full Custom Circuits Digital		Silicon-gate NMOS, CMOS	CMOS, Bipolar, merged CMOS/Bipolar, TTL, ECL
Linear	Bipolar small signal and high power up to 80V and up to 20A	Silicon-gate NMOS, CMOS	CMOS, merged CMOS/Bipolar, UHF Bipolar
Combined Digital Linear		Silicon-gate CMOS	CMOS, merged CMOS/Bipolar, UHF Bipolar
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer input (in order of preference)	Calma GDS II tape, schematics, layout and block diagram	Functional specification, logic diagram, Calma database tape, netlist	Functional spec and block diagram, customer-owned tooling, Calma database tape
Design Aids	CAD assistance, model parameters	Logic simulation, design rule checks, electrical rule checks, transient analysis, automatic breadboard wiring, logic simulation with extracted delays, training course, software	Alphanumeric netlist or schematic entry, circuit simulation, logic simulation, design and electrical rule checking
Production	In-house	In-house	In-house
Preferred Delivered Product	Wafers, die or packaged units	Packaged devices preferred; all others available	Fully tested assembled packages, wafers and all others available
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, all environmental, all military and classes testing	Full testing and screening including burn-in	Full testing and screening; burn-in if required
Electrical Test Systems Available	LTX	Fairchild Sentry 20, 21, Sentinel, Genrad GR-16	Fairchild Sentry Series 10, 15 and 81; Xicom, H.P. and other dedicated systems
Comments	Complete custom capability, including design, modeling and layout	Specialize in digital MOS/LSI and VLSI; will also customize by modifying MOS/LSI standard parts; second sources available; macrocells	Total capability offered, including analog and digital bipolar circuits up to GHz range

ASIC/CUSTOM (Cont'd)

Manufacturer	Sunshine Semiconductor	Tektronix	Toshiba America Electronic Components
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital, combined linear/digital	Linear, mixed linear/digital, bipolar	Digital
Gate Array			HC ² MOS Si-gate double layer metal
Chip Density Range (equiv. gates)		Up to 800 equivalent gates (digital)	37,932 to 129,042; 2-input NAND gates with a fanout of two
Cell Library	Si-gate CMOS	Digital and Analog	CMOS
Design Kit Available		Yes	Yes
Full Custom Circuits Digital	Silicon-gate CMOS, metal-gate CMOS, nonvolatile CMOS	Yes	1.5 μ CMOS, Mega-cell library including Z80 family, 82CXX peripherals, others, 1.2 μ
Linear		Bipolar (junction isolation); bipolar (sidewall oxide isolation); amplifiers, mixers, filters to UHF	1.5 μ CMOS, A/D, Op Amp, etc.
Combined Digital Linear	Metal Gate CMOS	Bipolar	Yes
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Product description, block diagram with specifications, logic diagram	QuickKic Database, Calma GDS II, Outform 3	1) Workstation interface (tape or floppy); 2) Logic diagram with netlist and test vectors; 3) circuit diagram/schematic
Design Aids	Breadboard, circuit and logic simulation, DRC, graphics, NCC	Training, QuickKic interactive schematic capture/layout editor, design consultation, manuals, full SPICE models, Electrical Rules Checking, Worst Case Analysis	Circuit simulation, logic simulation, test program generation; turn-key implementation for Mega-cell based custom circuits
Production	Procured	In-house	In-house
Preferred Delivered Product	Packaged dice, bare dice, design and layout	Tested/untested wafers, die, plastic DIP, ceramic DIP, 28,44,68 pin plastic/ceramic J-leaded quad packages	Packaged units (DIP, PLCC, PFP, CFP, PGA)
Test Program Generation	Yes	Yes	Yes
Production Test	Procured	Analog, parametric (DC), limited functional ATE-based, burn-in and thermal shock	Functional, parametric
Electrical Test Systems Available		Sentry, Series 80, Tektronix, ESI	Sentry VII, Sentry 10/20, TACT-820
Comments	Services include product and specification finalization, logic and circuit design, layout, test definition	Complete high-speed analog capability on two high-speed bipolar processes; SPICE library, proprietary DRC and worst-case analysis capability. In-house design center.	Toshiba offers gate array, standard cell and custom (super-integration); design centers in Boston, Dallas, and Sunnyvale CA.

ASIC/CUSTOM (Cont'd)

Manufacturer	TriQuint Semiconductor	Unicorn Microelectronics Corp. (UMC)	United Technologies
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital/Mixed Signal	Digital, combined digital/analog	Digital
Gate Array	SCFL Standard Cells	3 μ and 2 μ silicon-gate HCMOS	3 μ silicon-gate CMOS; 1.5 μ silicon-gate CMOS; 1.2 μ silicon-gate CMOS
Chip Density Range (equiv. gates)	Up to 15K Gates	200 to 4,080 2-input NAND gates	3,400—50,000
Cell Library	Yes	HCMOS	7400/4000 CMOS, 2900 series, 8X305, multipliers, adders, DSP cells, etc.
Design Kit Available	Yes	Yes	Yes, 1 week class
Full Custom Circuits Digital	GaAs IC designs by customer or TriQuint	5 μ metal-gate ALCMOS, 3 μ and 1.5 μ silicon-gate HCMOS	3 μ silicon-gate CMOS 1.5 μ silicon-gate CMOS 1.2 μ silicon-gate CMOS
Linear	Including MMICs to 26 GHz	3 μ silicon-gate HCMOS	
Combined Digital Linear	Yes	3 μ silicon-gate HCMOS	
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	CALMA GDSII for customer designs, Schematics for TriQuint designs, Workstation Netlist For Semicustom	Logic diagram, circuit diagram, breadboard, functional specification, test vectors, customer-owned tooling	Simulated netlist, logic diagram, customer owned tooling, PG tape, functional specs.
Design Aids	Detailed manuals, device models, logic models, Mentor workstations	Design rule checks, circuit simulation, logic simulation, schematic capture, test program generation, breadboard assistance	Schematic entry, design rule checks, logic simulation, testability analysis, layout, test program generation, workstation tools for Mentor and Valid.
Production	In-house	In-house	In-house
Preferred Delivered Product	Wafers, die, packaged parts	Packaged units, others available	Packaged dice, dice, probed wafers
Test Program Generation	Yes	Yes	Yes, automatic
Production Test	Yes	Functional, parametric, burn-in, thermal shock, environmental	MIL-STD-883 level B or S; MIL-M-38510/6XX (JAN); in-house total dose and transient upset testing
Electrical Test Systems Available	Tektronix 32XX Series, Tek LT 1001	Sentry VII, Sentry Series 20, Sentry Series 10, Teledyne, LTX	Trillium Micromaster, Genrad GR16
Comments	Custom foundry, semicustom arrays, custom design. STD cell library includes ROM, DDS macros, Linear Functions	Complete custom capability; from consumer to industrial application; low power, high speed/performance; silicon compiler; hierarchical structured CMOS customer ICs	Radiation hardened versions available; Silicon foundry also available

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Unitrode Integrated Circuits	Vitesse Semiconductor	VLSI Technology
FOR DETAILED DATA SEE:			
Customized Standard Circuits		Digital, Memory, Combination	
Gate Array		0.8 μ metal-gate GaAs E/D MESFET; 0.6 μ metal-gate GaAs E/D MESFET ECL, TTL, CMOS, GaAs I/O	Digital
Chip Density Range (equiv. gates)		1,500–350,000 2-Input NOR gates (gate arrays), 150–200,000 2-Input NOR gates (standard cell)	Up to 75,000 usable
Cell Library		SSI, MSI, RAM, ROM, ALU, Megacells, Custom/Compiled cells; over 300 cells (standard cells), over 150 cells (gate arrays)	1.5 μ , 1.0 μ , 0.8 μ CMOS compilation and logic synthesis
Design Kit Available		Yes, on-site design course	
Full Custom Circuits Digital		0.8 μ metal-gate GaAs E/D MESFET 0.6 μ metal-gate GaAs E/D MESFET I/O: ECL, TTL, CMOS, GaAs. 4-level aluminum Interconnect	H MOS, CMOS
Linear	Bipolar, BiCMOS	Same as Digital	
Combined Digital Linear	Bipolar, BiCMOS	Same as Digital	
Provide Design Assistance	Yes	Yes, On-site Design Course	Yes
Acceptable Customer Input (in order of preference)	Pattern generator tape, device schematics and performance specs, functional diagram	PG Tape (GDSII Format), circuit Schematics and timing requirements, functional and timing specifications.	Functional specification, logic diagram, net list, data tape, PG tape, mask
Design Aids	Predesigned circuit blocks, design engineering assistance, bread board and application assistance, design rule checks	Logic & timing simulation placement & routing, design rule checks, electrical rule checks, behavioral modeling & simulation, layout, design compiler, cell compiler, workstation tools for Daisy, Mentor, Valid, VLSI, Synopsis, Verilog, Sun and Apollo.	Compass design system, including high-level design language, circuit extraction, logic and circuit simulation, design rule checks, plotting, third party support Mentor, Daisy, Valid
Production	In-house	Design Fabrication, Assembly, Test in-house (devices) design, Assembly, Test In-house (packages)	In-house
Preferred Delivered Product	Packaged and tested finished goods; Tested / probed wafers or dice	Packaged/tested parts, dice, probed wafers	Packaged devices
Test Program Generation	Yes	Yes	Yes
Production Test	Ambient electrical only thru full military class-s screening	AC/DC functional and parametric, burn-in, thermal cycle, MIL-STD-883 screening, level B	Functional, parametric, burn-in, thermal shock, environmental, MIL
Electrical Test Systems Available	LTX, Credence	Teradyne J953 VLSI Tester, Teradyne J386 Memory Tester, Custom Systems.	Sentry 20/120 (256 pins), Textronics 1101 (512 pins)
Comments	Minimum life of product quantity \pm 500 Ku; Capabilities include: Double level metal, thin-film resistors, nitride passivation, laser trimming, MIL-M-38510 qualified, multiple package types, both bipolar and BiCMOS processes	Complete gate array, standard cell, and custom capability; Commercial, industrial, or military applications; very high speed, low power performance, applications support; design centers; complete in-house fab, assembly, and test capability; solid second-source.	Multiple sourcing compatibility, foundry services, training services, training and CAD aids to support user designed VLSI

ASIC/CUSTOM (Cont'd)

Manufacturer	VTC	Waferscale Integration	Western Design Center
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Linear, digital, combined linear/digital	Digital	Digital
Gate Array	2.0 μ silicon-gate CMOS		
Chip Density Range (equiv. gates)	Up to 6,000 gates	500 to 70,000 gates	Over 1,000
Cell Library	Linear/digital, digital	CMOS	Yes, CMOS
Design Kit Available	Yes	Yes	Yes
Full Custom Circuits Digital	ECL, TTL, aimed standard cell, CMOS standard cell, VL2000 bipolar digital standard cell, VL5000 CMOS digital standard cell	1.2 μ silicon-gate CMOS 1.0 μ silicon-gate CMOS 0.8 μ silicon-gate CMOS	1.0 to 3U CMOS
Linear	Bipolar cell library and full custom		Limited CMOS
Combined Digital Linear	VL1000 bipolar linear/digital cell library		Limited CMOS
Provide Design Assistance	Yes	Yes	Yes
Acceptable Customer Input (in order of preference)	Circuit diagram with test conditions and PG tape; circuit diagram with test conditions and simulated netlist; functional specification	Logic diagram with test vectors	'Idea' or market requirement, functional specification, logic diagram, logic capture file
Design Aids	Logic and circuit simulation, pre-designed linear and digital cells, schematic entry, regional design centers	Schematic entry, logic simulation, circuit simulation, test program generation, design rule checks	1. Tool box design system emulation, 2. logic simulation, 3. circuit simulation, 4. test program generation, 5. design rules checks, logic capture, full custom graphics support
Production	Complete mask, wafer fab, packaging test facility	Procured	Procured
Preferred Delivered Product	Packaged devices or die	Packaged devices	Packaged devices, dice, wafer
Test Program Generation	Yes	Yes	Yes
Production Test	Functional, parametric, burn-in, thermal shock, environmental, MIL	Functional, parametric, burn-in, thermal shock, environmental, hi-rel processing	Functional, parametric burn-in, device qual, package qual and for licensing purposes, full mil and life support.
Electrical Test Systems Available	LTX with ESILaser, Sentry 8, Sentry 80, MCT-2	Trillium, Teradyne	Sentry
Comments	All libraries and gate arrays have full CAD support.	Macro-block modular-cell semicustom library available, high performance bit-slice, EPROM and logic on the same chip	Full custom, microprocessor-core-based technology, technology licensing, W65C02, W65C816 core microprocessor with support cores available

IC MASTER

ASIC/CUSTOM (Cont'd)

Manufacturer	Western Digital	Xilinx	ZyMOS
FOR DETAILED DATA SEE:			
Customized Standard Circuits	Digital		Digital
Gate Array	Silicon-gate NMOS	CMOS DLM 1.2 μ	2.0, 1.5 and 1.2 μ CMOS standard cells
Chip Density Range (equiv. gates)	Up to 1,000 gates	1,000 to 10,000	Up to 25,000 gates
Cell Library	Yes	Yes: SSI, MSI, Macros	300+ cells; supercells such as 82C37, 54, 59
Design Kit Available		Yes	Yes
Full Custom Circuits Digital			2.0, 1.5 and 1.2 μ CMOS
Linear			
Combined Digital Linear			
Provide Design Assistance	Yes		Yes
Acceptable Customer Input (in order of preference)	Functional specification, logic system		Logic input through ZyP-AT CAD system, logic diagram, functional spec.
Design Aids	Logic simulation, design rule checks, test program development	Simulation, timing analysis, in-circuit debugger, PC or workstation based	Standard cell and supercell libraries, schematic capture, logic simulation, test program generation, DRCs, place and route, layout verification
Production	In-house	No masking—user programmable	Procured
Preferred Delivered Product	Packaged units and test dice	Packaged Units	Packaged die: PLCC, PDIP, SOIC, LCC, QFP. Die or wafers.
Test Program Generation	Yes	Not required—standard product	Yes
Production Test	Functional, burn-in	100% tested by Xilinx, burn-in available	Functional, parametric
Electrical Test Systems Available		Sentry	Sentry 20
Comments	Uncommitted logic arrays, 20 pin DIP, 130 prefabricated logic elements or 28/40 pin DIP, 400 prefabricated logic elements	User programmable gate array, 68, 160, I/O Reconfigurable in-system.	ZyP-AT CAD system available at customer site.

ASIC/CUSTOM—Gate Arrays

Mfr/ Equiv.	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
Actel	1200	70	CMOS	1.2	2				57	x				x	Field Programmable	A1010A	Actel	(3300)	5	
			CMOS	2	2				57	x				Field Programmable	A1010	Actel	(3300)			
	2000	70	CMOS	1.2	2				69	x			x	Field Programmable	A1020A	Actel	(3300)			
			CMOS	2	2				69	x			x	Field Programmable	A1020	Actel	(3300, 3303)			
	2500	5.5	120	CMOS	1.2	2			82	x			x	Field Programmable Gate Array	A1225	Actel	(3301)			
	4000	5.5	120	CMOS	1.2	2			104	x			x	Field Programmable Gate Array	A1240	Actel	(3301)	10		
	8000	5.5	120	CMOS	1.2	2			140	x			x	Field Programmable Gate Array	A1280	Actel	(3301)			
Applied Micro Circuits																				
	800	0.5	300	BiCMOS	1	3	1		44	x	x	x	x	x		Q24008	† AMCC	15		
		0.6	240	BiCMOS	1.5	3	1		44	x	x	x	x	x		Q800B	† AMCC			
	900	0.10	1250	BIP	1	3	2		44	x	x	x	x	x	Includes high speed phase-lock loop	Q20P010	† AMCC			
	1000	0.1	1200	Bipolar	1	3	2		66		x	x	x	x		Q20010	† AMCC			
	1300	0.21	600	Bipolar	2	2	0		76		x	x	x	x		Q1300T	† AMCC			
	1600	0.21	600	Bipolar	2	2	0		106		x	x	x	x	1280 bits of RAM	QM1600T	† AMCC			
	2160	0.4	300	BiCMOS	1	2	1		80	x	x	x	x	x		Q24021	† AMCC			
		0.61	240	BiCMOS	1.5	2	1		80	x	x	x	x	x	48 mA Drive	Q2100B	† AMCC			
	2500	0.10	1250	BIP	1	3	2		58	x	x	x	x	x	Includes high speed phase lock loop	Q20P025	† AMCC			
	3500	0.1	1500	BIP	1	3	2		110	x	x	x	x	x		Q20025	† AMCC			
		0.21	600	Bipolar	2	2	0		120		x	x	x	x		Q3500T	† AMCC			
	5000	0.21	600	Bipolar	2	2	0		160		x	x	x	x		Q5000T	† AMCC			
	5760	0.4	300	BiCMOS	1	3	1		132	x	x	x	x	x		Q24060	† AMCC			
		0.61	240	BiCMOS	1.5	3	1		132	x	x	x	x	x	48 mA Drive	Q6000B	† AMCC			
	5800	0.25 *	1.2 GHz	ECL/TTL	1.5	2	1		120		x	x		x		Q20045	† AMCC			
	8000	0.1	1200	Bipolar	1	3	2		162		x	x	x	x		Q20080	† AMCC			
	9072	0.4	300	BiCMOS	1	2	1		160	x	x	x	x	x		Q24091	† AMCC			
		0.61	240	BiCMOS	1.5	2	1		160	x	x	x	x	x	48 mA Drive	Q9100B	† AMCC			
	13440	0.4	300	BiCMOS	1	3	1		226	x	x	x	x	x		Q24140	† AMCC			
		0.61	240	BiCMOS	1.5	3	1		226	x	x	x	x	x	48 mA Drive	Q14000B	† AMCC			
	18000	0.1	1500	BIP	1	3	2		212	x	x	x	x	x		Q20120	† AMCC			
	27520	0.53 *	280	BiCMOS	1.5	2	1		256	x	x	x	x	x		Q24280	† AMCC			
	28000	0.85	180	BiCMOS	1.5	3	1		256	x	x	x	x	x		Q28000B	† AMCC			
AT&T	1000	0.9	800	ECL	1.5	3			36		x	x	x	x	ECL 10K, 10KH, Schottky TTL Compatible I/O	ATE1000	† AT&T	(3386)		
	1048	0.4	3000	ECL	1.5	3	2				x	x	x	x	ECL 10K, 10KH, Schottky TTL Compatible I/O	BE1000	† AT&T			
	2000			CMOS	0.9	2			64	x	x	x		x	ECL 10K, 10KH, Schottky TTL Compatible I/O	ATT3020	AT&T			
		0.9	800	ECL	1.5	3			72		x	x	x	x		ATE2000	† AT&T			
	3000			CMOS	0.9	2			80	x	x	x		x		ATT3030	AT&T			
	4196		2200	ECL	1.5	2			108				x			BE4000	AT&T			
	4200			CMOS	0.9	2			96	x	x	x		x		ATT3042	AT&T			
	6000	0.9	800	ECL	1.5	3			120		x	x	x	x	ECL 10K, 10KH, Schottky TTL Compatible I/O	ATE6000	† AT&T			
	6400			CMOS	0.9	2			120	x	x	x		x		ATT3064	AT&T			
	9000			CMOS	0.9	2			144	x	x	x		x		ATT3090	AT&T			
	9432		2200	ECL	1.5	2			164				x			BE9000	AT&T			
Exar	140	8	8	CMOS	8	1			29	x	x	x		x	32 dedicated flip-flops	XR-CMA	† Exar	45		
	156	3	35	CMOS	3	2	1		22	x	x	x		x	Silicon gate	30015	Exar			
	192	50	1	I ² L		1			24	x	x	x		x	Programmable speed/power	XR200	† Exar			
	200	8	8	CMOS	8	1			34	x	x	x		x	32 dedicated flip-flops	XR-CMB	Exar			
	270	8	8	CMOS	8	1			40	x	x	x		x	32 dedicated flip-flops	XR-CMC	† Exar			
	288	3	35	CMOS	3	2	1		30	x	x	x		x	Silicon gate	30030	Exar			
		50	1	I ² L		1			28	x	x	x		x	Programmable speed/power	XR300	† Exar			
	440	8.0	8	CMOS	8	1			46	x	x	x		x	32 dedicated flip-flops	XR-CMD	† Exar			
	460	3	35	CMOS	3	2	1		38	x	x	x		x	Silicon gate	30045	Exar			
	520	50	1	I ² L		1			40	x	x	x		x	Programmable speed/power					
	793	3	35	CMOS	3	2	1		50	x	x	x		x	Silicon gate	XR500 30080	† Exar			

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† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available † Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
Exar																		(Cont'd)		
1548	3	35	CMOS	3	2	1			70	x	x	x		x	Silicon gate	30155	Exar			
3025	3	35	CMOS	3	2	1			98	x	x	x		x	Silicon gate	30300	Exar			
EXEL Microelectronics																				
800	25	50	CMOS	1.5	2	2	22	10	10	x	x	x		x	E ² Programmable	XL78C800	† EXEL			
Fujitsu																				
32	0.16	1000	BP ECL	1	2		12	10	13 14			x	x		Ultra-Low Output Jitter ECL 10KH, 100K Optional	E32 MB1700	◊ Fujitsu ◊ Fujitsu	5		
		1500	ECL	0.5	1	1		16					x			MB1700	◊ Fujitsu			
128	0.075	3000	BP	0.5	2		15	8	16 16				x		Ultra-Low Output Jitter ECL 10KH, 100K Optional	E128H MB1800 MB1800	◊ Fujitsu ◊ Fujitsu ◊ Fujitsu	(3486) (3486)		
	0.075	2500	ECL										x							
		3000	ECL	0.5	1	1		8					x							
	0.16	1000	BP ECL	1	2		22	20	23 22			x	x		Ultra-Low Output Jitter ECL 10KH, 100K Optional	E128 MB1600	◊ Fujitsu ◊ Fujitsu	10		
		1500	ECL	0.5	1	1		8					x			MB1600	◊ Fujitsu			
336	1.5	125	CMOS	1.5	2	1			60	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C330UHB	Fujitsu			
530	1.5	125	CMOS	1.5	2	1			68	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C530UHB	Fujitsu			
645	0.8	180	BiCMOS	1.5	2	1			52		x	x		x	24 mA output option, 3-input merged logic	BC400	Fujitsu	15		
830	1.5	125	CMOS	1.5	2	1			76	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C830UHB	Fujitsu			
1056	0.55	800	BIP	1	3						x	x	x		ECL 10KH, 100K Optional	ET750	Fujitsu			
1218	0.8	180	BiCMOS	1.5	2	1			72		x	x		x	24 mA output option, 3-Input merged logic.	BC800	Fujitsu			
1233	1.5	120	CMOS	1.5	2	1			95	x	x	x		x	Twin Tub Isolated CMOS, High Drive—10mA Outputs	C1200UHB	Fujitsu			
1248	0.075	2000	BIP	0.3	4				80		x	x	x	x	ECL 100KH, 100K Optional	ET1000VH	Fujitsu	20		
1724	1.5	125	CMOS	1.5	2	1			112	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C1700UHB	Fujitsu			
1872	0.8	180	BiCMOS	1.5	2	1			96		x	x		x	24 mA output option, 3-input merged logic	BC1200	Fujitsu			
1920	0.55	800	BIP	1	2			72	120		x	x	x	x	4.6K RAM	ET2004M	Fujitsu			
2112	0.55	800	BIP	1	3						x	x	x		ECL 10KH, 100K Optional	ET1500	Fujitsu			
2220	1.5	125	CMOS	1.5	2	1			127	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C2200UHB	Fujitsu	25		
2544	0.075		BIP	0.3	4				104		x	x	x	x	ECL 100KH, 100K Optional	ET2600VH	Fujitsu			
2640	0.22	800	BIP	1	3				120			x	x			ET2009M	Fujitsu			
2700	0.8	200	CMOS	0.8	2	1			108	x	x	x		x		C610272	◊ Fujitsu	(3488)		
3066	1.5	120	CMOS	1.5	2	1			130	x	x	x		x		C3000UHB	Fujitsu			
3240	0.8	180	BiCMOS	1.5	2	1			112		x	x		x	Clock Distribution Network, 24 mA Outputs	BC2000	Fujitsu	30		
3400	0.8	200	CMOS	0.8	2	1			123	x	x	x		x		C610342	◊ Fujitsu	(3488)		
3584	0.18	1000	GaAs	0.8	3		40	52	92			x	x	x		M853030	◊ Fujitsu	(3491)		
3960	0.55	800	BIP	1	3				120			x	x			ET3004M	Fujitsu			
4174	1.5	125	CMOS	1.5	2	1			160	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C4100UHB	Fujitsu			
4296	0.55	800	BIP	1	3			72	120		x	x	x	x	ECL 10K or 100K optional.	ET3000	Fujitsu	35		
4312	0.55	250	BiCMOS	1	3	1			96		x	x	x	x	ECL 10KH, 100K Optional	BC4000H	Fujitsu			
4640	0.075		BIP	0.3	4				136		x	x	x	x	ECL 10KH, 100K Optional	ET5000VH	Fujitsu			
4900	0.8	200	CMOS	0.8	2	1	x	x	148	x	x	x		x		C610492	◊ Fujitsu	(3488)		
4928	0.1		BIP	0.5	3			222	200		x	x	x	x	ECL 10KH, 100K Optional	ET5005HM	Fujitsu			
5700	0.8	200	CMOS	0.8	2	1			163	x	x	x		x		C610572	◊ Fujitsu	(3488)		
6000	1.5	120	CMOS	1.5	2	1			170	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C6000UHB	Fujitsu	40		
6160	0.55	800	BIP	1	3			84	136		x	x	x	x	ECL 10K or 100K optional.	ET4500	Fujitsu			
6400	0.18	1000	GaAs	0.8	3		52	68	120			x	x	x		M853050	◊ Fujitsu	(3491)		
6900	0.8	200	CMOS	0.8	2	1			163	x	x	x		x		C610692	◊ Fujitsu	(3488)		
6920	0.075		BIP	0.3	4				160		x	x	x	x	ECL 10KH, 100K Optional	ET7000VH	Fujitsu	45		
7920	0.55	250	BiCMOS	1	3	1			200		x	x	x	x	ECL 10KH, 100K Optional, 40K-bit Dual-Port Embedded RAM	BC8040HM	◊ Fujitsu			
8160	0.55	250	BiCMOS	1	3	1			128		x	x	x	x	ECL 10KH, 100K Optional	BC8000H	Fujitsu			
8768	1.5	125	CMOS	1.5	2	1			188	x	x	x		x	Clock Distribution Network, 24 mA Outputs	C8700UHB	Fujitsu			
9856	0.35	1000	BIP	0.5	3	0			300		x	x	x	x		E10000H	◊ Fujitsu			
		1100	BIP	0.5	3			120	200		x	x	x	x	ECL 10KH, 100K Optional	ET10000H	Fujitsu	50		
9858	0.08		ECL	0.3	4			200	300			x	x		ECL 10KH, 100K Optional	E10000VH	Fujitsu			
10000	0.65	200	CMOS	0.8	2	1			108	x	x	x		x		C621103	◊ Fujitsu	(3489)		
	0.8	200	CMOS	0.8	2	1			188	x	x	x		x		C610103	◊ Fujitsu	(3488)		

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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
Fujitsu																			(Cont'd)
10224	0.8		CMOS	1.2	3				108	x		x		x			C10KAU	Fujitsu	
11968	0.55	250	BiCMOS	1	3	1			160		x	x		x		ECL 10KH, 100K Optional	BC12000H	♦ Fujitsu	
12000	1.5	120	CMOS	1.5	2	1			229	x	x	x		x		Clock Distribution Network, 24 mA Outputs	C12000UHB	♦ Fujitsu	
13000	0.8	200	CMOS	0.8	2	1			220	x	x	x		x			CG10133	♦ Fujitsu	(3488)
13376	0.18	1000	GaAs	0.8	3		96	100	196			x		x			MB53100	♦ Fujitsu	(3491)
14530	0.08		ECL	0.3	4			204	294					x		ECL 10KH, 100K Optional	E10160VHR	Fujitsu	
14572	0.08		ECL	0.3	4			222	288					x		ECL 10KH, 100K Optional, 40K Ram			
15000	0.65	200	CMOS	0.8	2	1			142	x	x	x		x			E10040VHM	Fujitsu	
15486	0.8		CMOS	1.2	3				138	x		x		x			CG21153	♦ Fujitsu	(3489)
16720	0.55	250	BiCMOS	1	3	1			200		x	x		x		ECL 10KH, 100K Optional	C15KAU	Fujitsu	
16896	0.18	1000	GaAs	0.8	3		96	100	196			x		x			BC16000H	♦ Fujitsu	
20000	0.65	200	CMOS	0.8	2	1			155	x	x	x		x			MB53150	♦ Fujitsu	(3491)
20376	0.18		GaAs	0.8	3		96	132	156	x		x		x			CG21203	♦ Fujitsu	(3489)
20876	0.8		CMOS	1.2	3				155	x		x		x			MB53208	♦ Fujitsu	(3491)
22896	0.12	1000	GaAs	0.8	3				256			x		x		10K bits RAM Embedded	C20KAU	Fujitsu	
30528	0.18	1000	GaAs	0.8	3		100	156	256			x		x			MB53200	♦ Fujitsu	
31000	0.65	200	CMOS	0.8	3	1			178	x	x	x		x			MB53300	♦ Fujitsu	(3491)
31500	1.0	130	CMOS	1.2	3	1			178	x	x	x		x			CG21303	Fujitsu	(3489)
38948	0.08		ECL	1	4				300					x		50% TO 75% Gates Usable 10KH, 100K I/O OptionsE	C30KAU	Fujitsu	
39000	0.08		BP	0.4	4		300	224	300					x			E3000VH	♦ Fujitsu	
41000	0.65	200	CMOS	0.8	3	1			220	x	x	x		x			E3000VH	♦ Fujitsu	
41184	1	130	CMOS	1.2	3	1			220	x	x	x		x		50% to 75% Gates Usable	CG21403	♦ Fujitsu	
52000	0.65	200	CMOS	0.8	3	1			257	x	x	x		x			C40KAU	Fujitsu	
52164	1	130	CMOS	1.2	3	1			257	x	x	x		x		50% to 75% Gates Usable	CG21503	♦ Fujitsu	
75000	0.65	200	CMOS	0.8	3	1			284	x	x	x		x			C50KAU	Fujitsu	
75140	1	130	CMOS	1.2	3	1			300	x	x	x		x		50% to 75% Gates Usable	CG21753	♦ Fujitsu	(3489)
102000	0.65	200	CMOS	0.8	3	1			332	x	x	x		x			C75KAU	Fujitsu	
102144	1	130	CMOS	1.2	3	1			332	x	x	x		x		50% to 75% Gates Usable	CG21104	♦ Fujitsu	(3489)
129540	0.37		CMOS	0.8	3				300	x		x		x			C100KAU	Fujitsu	
160930	0.37		CMOS	0.8	3				332	x		x		x			CG31134	Fujitsu	(3490)
210188	0.37		CMOS	0.8	3				332	x		x		x			CG31164	Fujitsu	(3490)
																	CG31204	Fujitsu	(3490)
GEC Plessey Semiconductors																			
70	6	40	Si-Gate	4	1	1			18	x	x	x		x		Supply voltage 3 to 15 V.	MHA	GEC Plessey	
130	2.5	80	CML	3	1				20	x	x	x		x		300 μW/gate, autoroutable	ULA1RA	GEC Plessey	
	7.5	20	CML	3	1				20	x	x	x		x		100 μW/gate, channel-less	ULA1RB	GEC Plessey	
	15	10	CML	3	1				20	x	x	x		x		30 μW/gate, channel-less	ULA1RC	GEC Plessey	
	50	10	CML	3	1				20	x	x	x		x		5 μW/gate, channel-less	ULA1RD	GEC Plessey	
140	6	40	Si-Gate	4	1	1			24	x	x	x		x		Supply voltage 3 to 15 V.	MHB	GEC Plessey	
	17	9	CMOS	7	1				29	x	x	x		x			MCA	† GEC Plessey	
200	6	40	Si-Gate	4	1	1			30	x	x	x		x		Supply voltage 3 to 15 V.	MHC	GEC Plessey	
	17	9	CMOS	7	1				34	x	x	x		x			MCB	† GEC Plessey	
270	17	9	CMOS	7	1				40	x	x	x		x			MCC	† GEC Plessey	
300	2.5	80	CML	3	1				30	x	x	x		x		300 μW/gate, Channel-less	ULA3RA	GEC Plessey	
	7.5	20	CML	3	1				30	x	x	x		x		100 μW/gate, channel-less	ULA3RB	GEC Plessey	
	15	10	CML	3	1				30	x	x	x		x		30 μW/gate, channel-less	ULA3RC	GEC Plessey	
	50	10	CML	3	1				30	x	x	x		x		5 μW/gate, channel-less	ULA3RD	GEC Plessey	
330	6	40	Si-Gate	4	1	1			40	x	x	x		x		Supply voltage 3 to 15 V.	MHD	GEC Plessey	
340	17	9	CMOS	7	1				40	x	x	x		x		28 dedicated flip-flops	MCE	† GEC Plessey	
392	3	35	CMOS	3	1	1			26	x	x	x		x			MA8305	GEC Plessey	
440	17	9	CMOS	7	1				46	x	x	x		x		32 dedicated flip-flops	MCD	† GEC Plessey	
500	2.5	80	CML	3	1				38	x	x	x		x		300 μW/gate, Channel-less	ULA5RA	GEC Plessey	
	7.5	20	CML	3	1				38	x	x	x		x		100 μW/gate, channel-less	ULA5RB	GEC Plessey	
	15	10	CML	3	1				38	x	x	x		x		30 μW/gate, channel-less	ULA5RC	GEC Plessey	
	50	10	CML	3	1				38	x	x	x		x		5 μW/gate, channel-less	ULA5RD	GEC Plessey	
550	6	40	Si-Gate	4	1	1			48	x	x	x		x		Supply voltage 3 to 15 V.	MHE	GEC Plessey	
630	1.0	250	BIP	1.5	2				32	x	x	x		x			ULA6DSA	GEC Plessey	
	1.6	150	BIP	1.5	2				32	x	x	x		x			ULA6DSB	GEC Plessey	
	4.0	75	BIP	1.5	2				32	x	x	x		x			ULA6DSC	GEC Plessey	
	17	9	CMOS	7	1				50	x	x	x		x			MCF	† GEC Plessey	
640	1.2	100	CMOS	2	2	1			36	x	x	x		x			CLA5100	GEC Plessey	
660	6	40	Si-Gate	4	1	1			56	x	x	x		x		Supply voltage 3 to 15 V.	MHF	GEC Plessey	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State				
GEC Plessey Semiconductors																		
840	2.1	50	CMOS	3	2				40	x	x	x		x		CLA3100	GEC Plessey	5
880	17	9	CMOS	7	1				58	x	x	x				MCG	↑ GEC Plessey	
900	2.5	80	CML	3	1				48	x	x	x	x	x	300 μW/gate, Channel-less	ULA9RA	GEC Plessey	
	7.5	20	CML	3	1				48	x	x	x	x	x	100 μW/gate, channel-less	ULA9RB	GEC Plessey	
	15	10	CML	3	1				48	x	x	x	x	x	30 μW/gate, channel-less	ULA9RC	GEC Plessey	
	50	10	CML	3	1				48	x	x	x	x	x	8 μW/gate, channel-less	ULA9RD	GEC Plessey	
1000	6	40	Si-Gate	4	1	1			68	x	x	x	x	x	Supply voltage 3 to 15 V.	MHG	GEC Plessey	10
1120	4 *	25	CMOS	4	2				48	x	x	x		x		MA2010	GEC Plessey	
1200	2.5	80	CML	3	1				52	x	x	x	x	x	300 μW/gate, Channel-less	ULA12RA	GEC Plessey	
	7.5	20	CML	3	1				52	x	x	x	x	x	100 μW/gate, channel-less	ULA12RB	GEC Plessey	
	15	10	CML	3	1				52	x	x	x	x	x	30 μW/gate, channel-less	ULA12RC	GEC Plessey	
	50	10	CML	3	1				52	x	x	x	x	x	5 μW/gate, channel-less	ULA12RD	GEC Plessey	
1210	1	250	BIP	1.5	2				44	x	x	x	x	x		ULA12DSA	GEC Plessey	15
	1.6	150	BIP	1.5	2				44	x	x	x	x	x		ULA12DSB	GEC Plessey	
	4	75	BIP	1.5	2				44	x	x	x	x	x		ULA12DSC	GEC Plessey	
1232	1.2	100	CMOS	2	2	1			48	x	x	x		x		CLA5200	GEC Plessey	20
1440	2.1	50	CMOS	3	2				52	x	x	x		x		CLA3300	GEC Plessey	
1600	2.5	80	CML	3	1				62	x	x	x	x	x	300 μW/gate, Channel-less	ULA16RA	GEC Plessey	
	6	40	Si-Gate	4	1	1			84	x	x	x	x	x	Supply voltage 3 to 15 V.	MHH	GEC Plessey	
	7.5	20	CML	3	1				62	x	x	x	x	x	100 μW/gate, channel-less	ULA16RB	GEC Plessey	
	15	10	CML	3	1				62	x	x	x	x	x	30 μW/gate, channel-less	ULA16RC	GEC Plessey	
	50	5	CML	3	1				62	x	x	x	x	x	5 μW/gate, channel-less	ULA16RD	GEC Plessey	
1632	4 *	25	CMOS	4	2		16	16	32	x	x	x		x		MA2016	GEC Plessey	25
1870	1	250	BIP	1.5	2				64	x	x	x	x	x		ULA19DSA	GEC Plessey	
	1.6	150	BIP	1.5	2				64	x	x	x	x	x		ULA19DSB	GEC Plessey	
	4	75	BIP	1.5	2				64	x	x	x	x	x		ULA19DSC	GEC Plessey	
1920	0.9	100	CMOS	2.5	2	2			59	x		x		x		MA6000	GEC Plessey	30
2000	2.5	80	CML	3	1				72	x	x	x	x	x	300 μW/gate, Channel-less	ULA20RA	GEC Plessey	
	7.5	20	CML	3	1				72	x	x	x	x	x	100 μW/gate, channel-less	ULA20RB	GEC Plessey	
	15	10	CML	3	1				72	x	x	x	x	x	30 μW/gate, channel-less	ULA20RC	GEC Plessey	
	50	5	CML	3	1				72	x	x	x	x	x	5 μW/gate, channel-less	ULA20RD	GEC Plessey	
2016	1.2	100	CMOS	2	2	1			64	x	x	x		x		CLA5300	GEC Plessey	
2400	2.1	50	CMOS	3	2				64	x	x	x		x		CLA3500	GEC Plessey	
	2.9	40	CMOS	2	2				64	x	x	x		x		CLA4500	GEC Plessey	
2436	4 *	25	CMOS	4	2		16	16	48	x	x	x		x		MA2024	GEC Plessey	35
2464	2 *	40	CMOS/SOS	3	2				80	x	x	x		x	Radiation Hardened	MA9024	GEC Plessey	
2550	1.0	250	BIP	1.5	2				74	x	x	x	x	x		ULA25DSA	GEC Plessey	40
3060	1.2	100	CMOS	2	2	1			80	x	x	x		x		CLA5400	GEC Plessey	
3876	4	25	CMOS	4	2				96	x	x	x		x		MA2038	GEC Plessey	
3904	0.9 *	100	CMOS	2	2				96	x	x	x		x		MA4039	GEC Plessey	
4048	1.7	50	SOS	3	2	1			98	x		x		x		MAS9040	GEC Plessey	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
GEC Plessey Semiconductors																			
4200	2.1	50	CMOS	3	2				84	x	x	x		x			CLA3700	GEC Plessey	5
	2.9	40	CMOS	2	2				80	x	x	x		x			CLA4700	GEC Plessey	
4404	1.2	100	CMOS	2	2	1			96	x	x	x		x			CLA5500	GEC Plessey	
5510	0.9 *	100	CMOS	2	2				112	x	x	x		x			MA4055	GEC Plessey	
5984	1.2	100	CMOS	2	2	1			112	x	x	x		x			CLA5600	GEC Plessey	10
6000	2.1	50	CMOS	3	2	1			108	x	x	x		x			CLA3900	GEC Plessey	
	3.0	100	CMOS	2					120	x	x	x					CLA4000	GEC Plessey	
7104	1.2	100	CMOS	2	2	1			128	x	x	x		x			CLA5700	GEC Plessey	
7544	0.9 *	100	CMOS	2	2				136	x	x	x		x			MA4075	GEC Plessey	15
7920	1.6	150	BIP	1.5	2				138	x	x	x	x	x			ULA80DSB	GEC Plessey	
8856	1.2	100	CMOS	2	2	1			144	x	x	x		x			CLA5800	GEC Plessey	
10044	0.9 *	100	CMOS	2	2				160	x	x	x		x			MA4100	GEC Plessey	
10440	1.2	100	CMOS	2	2	1			160	x	x	x		x			CLA5900	GEC Plessey	20
Marconi Circuit Technology																			
25000	0.6	140	SOS	1.5	2	1				x		x		x			MAS25K	GEC Plessey	
GoldStar Technology																			
272	5	25	CMOS	3.5	1	1			36	x	x	x		x			GCL3020	GoldStar	
342	5	25	CMOS	3.5	1	1			40	x	x	x		x			GCL3030	GoldStar	25
420	5	25	CMOS	3.5	1	1			44	x	x	x		x			GCL3040	GoldStar	
472	0.9	35	CMOS	2	2	1			46	x	x	x	x	x			GCL6009S	GoldStar	
600	5	25	CMOS	3.5	1	1			52	x	x	x		x			GCL3060	GoldStar	
812	5	25	CMOS	3.5	1	1			60	x	x	x		x			GCL3080	GoldStar	
880	2.5	66	CMOS	3	2	1			74	x	x	x		x			GCL5080	GoldStar	30
902	0.9	35	CMOS	2.0	2	1			62	x	x	x		x			GCL6017S	GoldStar	
1056	5	25	CMOS	3.5	1	1			68	x	x	x		x			GCL3110	GoldStar	
1332	5	25	CMOS	3.5	1	1			76	x	x	x		x			GCL3130	GoldStar	
1404	2.5	66	CMOS	3	2	1			92	x	x	x		x			GCL5140	GoldStar	
1470	0.9	35	CMOS	2	2	1			78	x	x	x		x			GCL6028S	GoldStar	35
1722	5.0	25	CMOS	3.5	1	1			86	x	x	x		x			GCL3170	GoldStar	
2162	5.0	25	CMOS	3.5	1	1			96	x	x	x		x			GCL3210	GoldStar	
2224	2.5	66	CMOS	3	2	1			114	x	x	x		x			GCL5220	GoldStar	
2448	0.9	35	CMOS	2	2	1			100	x	x	x		x			GCL6047S	GoldStar	
2550	5	25	CMOS	3.5	1	1			104	x	x	x		x			GCL3250	GoldStar	40
3192	2.5	66	CMOS	3	2	1			138	x	x	x		x			GCL5320	GoldStar	
3520	0.9	35	CMOS	2	2	1			118	x	x	x		x			GCL6068S	GoldStar	
4202	2.5	66	CMOS	3	2	1			156	x	x	x		x			GCL5420	GoldStar	
4440	0.9	35	CMOS	2	2	1			134	x	x	x	x	x			GCL6087S	GoldStar	
6000	2.5	66	CMOS	3	2	1			180	x	x	x		x			GCL5600	GoldStar	(Continued)
6076	0.9	35	CMOS	2	2	1			158	x	x	x		x			GCL6119S	GoldStar	
8448	0.9	35	CMOS	2	2	1			184	x	x	x		x			GCL6166S	GoldStar	
10619	0.9	35	CMOS	2	2	1			206	x	x	x		x			GCL6209S	GoldStar	
13524	0.9	35	CMOS	2	2	1			232	x	x	x		x			GCL6267S	GoldStar	
Gould AMI																			
1600	.38	160	CMOS	1.0	2/3	1			140	x		x		x			GD16K	♦† Gould AMI (3499)	(Continued)
3000	.38	160	CMOS	1.0	2/3	1			56	x		x		x			GD3K	♦† Gould AMI (3499)	
	.50	120	CMOS	1.25	2	1			72	x		x		x			GC3K	♦† Gould AMI (3499)	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
(Cont'd)																				
Gould AMI	5000	.38	160	CMOS	1.0	2/3	1			76	x		x		x			GD5K ♂† Gould AMI (3499)		
		.50	120	CMOS	1.25	2	1			98	x		x		x			GC5K ♂† Gould AMI (3499)		
	7000	.38	160	CMOS	1.0	2/3	1			92	x		x		x			GD7K ♂† Gould AMI (3499)		
		.50	120	CMOS	1.25	2	1			116	x		x		x			GC7K ♂† Gould AMI (3499)		
	9000	.38	160	CMOS	1.0	2/3	1			100	x		x		x			GD9K ♂† Gould AMI (3499)		
	10000	.50	120	CMOS	1.25	2	1			136	x		x		x			GC10K ♂† Gould AMI (3499)		
	12000	.38	160	CMOS	1.0	2/3	1			120	x		x		x			GD12K ♂† Gould AMI (3499)		
	15000	.50	120	CMOS	1.25	2	1			168	x		x		x			GC15K ♂† Gould AMI (3499)		
	20000	.38	160	CMOS	1.0	2/3	1			156	x		x		x			GD20K ♂† Gould AMI (3499)		
		.50	120	CMOS	1.25	2	1			196	x		x		x			GC20K ♂† Gould AMI (3499)		
	25000	.38	160	CMOS	1.0	2/3	1			180	x		x		x			GD25K ♂† Gould AMI (3499)		
		.50	120	CMOS	1.25	2	1			220	x		x		x			GC25K ♂† Gould AMI (3499)		
	30000	.50	120	CMOS	1.25	2	1			246	x		x		x			GC30K ♂† Gould AMI (3499)		
	35000	.38	160	CMOS	1.0	2/3	1			208	x		x		x			GD35K ♂† Gould AMI (3499)		
	50000	.38	160	CMOS	1.0	2/3	1			256	x		x		x			GD50K ♂† Gould AMI (3499)		
	70000	.38	160	CMOS	1.0	2/3	1			288	x		x		x			GD70K ♂† Gould AMI		
	100000	.38	160	CMOS	1.0	2/3	1			348	x		x		x			GD100K ♂† Gould AMI (3499)		
	200000	.38	160	CMOS	1.0	2/3	1			492	x		x		x			GD200K ♂† Gould AMI		
Harris Semiconductor	1500	1.8	45	CMOS	4	1				84	x	x	x		x			IGD11500 † Harris		
	1700	0.68		CMOS	1.2	2				60	x	x	x		x			AGC40170 † Harris		
		0.82		CMOS	1.2	2				60	x	x	x		x			TAGC40170 † Harris		
	6200	0.68		CMOS	1.2	2				104	x	x	x		x			AGC40620 † Harris		
		0.82		CMOS	1.2	2				104	x	x	x		x			TAGC40620 † Harris		
	10000	0.67		CMOS/SOS	1.2	2				164	x	x	x		x			AVA10000 ‡ Harris		
	13500	0.68		CMOS	1.2	2				172	x	x	x		x			AGC41350 † Harris		
		0.82		CMOS	1.2	2				172	x	x	x		x			TAGC41350 † Harris		
	20000	0.67		CMOS/SOS	1.2	2				234	x	x	x		x			AVA20000 ‡ Harris		
Hitachi	770	0.7	200	CMOS	1	2				68	x	x	x		x			HG62E08 Hitachi		
	1162	0.7	200	CMOS	1	2				80	x	x	x		x			HG62E11 Hitachi		
	2178	0.7	200	CMOS	1	2				100	x	x	x		x			HG62E22 Hitachi		
				CMOS	1	2				132	x	x	x		x			HG62F22 Hitachi		
	3210	0.45	160	BiCMOS	1.3	2				102	x	x	x		x			HG29A32 Hitachi		
	3297	0.7	200	CMOS	1	2				120	x	x	x		x			HG62E33 Hitachi		
				CMOS	1	2				132	x	x	x		x			HG62F33 Hitachi		
	4309	0.7	200	CMOS	1	2				100	x	x	x		x			HG62E43 Hitachi		
				CMOS	1	2				160	x	x	x		x			HG62F43 Hitachi		
	5821	0.7	200	CMOS	1	2				118	x	x	x		x			HG62E58 Hitachi		
				CMOS	1	2				160	x	x	x		x			HG62F58 Hitachi		
	7488	0.7	200	CMOS	1	2				138	x	x	x		x			HG62E75 Hitachi		
				CMOS	1	2				192	x	x	x		x			HG62F75 Hitachi		
	10076	0.7	200	CMOS	1	2				162	x	x	x		x			HG62E101 Hitachi		
				CMOS	1	2				192	x	x	x		x			HG62F101 Hitachi		
	13015	0.7	200	CMOS	1	2				190	x	x	x		x			HG62E130 Hitachi		
	18176	0.7	200	CMOS	1	2				230	x	x	x		x			HG62E182 Hitachi		
	24020	0.7	200	CMOS	1	2				272	x	x	x		x			HG62E240 Hitachi		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells		Input/Output Compatibility						Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
Honeywell	0.8		Bipolar	4	2				24		x	x	x		Replicates Obsolete Analog SSI Functions.	HP BIPOLAR DEVICE ARRAY	† Honeywell	5	
150	0.8	500	Bipolar	4	2				16		x	x	x	x	Replicates Obsolete DTL and RTL SSI Functions.	BIPOLAR DEVICE ARRAY	† Honeywell		
1500	0.8	500	Bipolar	4	2				24		x	x		x	Replicates Obsolete TTL, SSI Functions.	TTL GATE ARRAY	† Honeywell		
24000	1	180	RICMOS	1.2	2	1			218	x	x	x		x	Radiation Hardened (1M Rad)	HR1060	† Honeywell		
90000	0.6	410	RICMOS	0.8	3	1			316	x	x	x		x	Radiation Hardened (1M Rad)	HR2210	† Honeywell		
Integrated Circuit Systems																			10
864	2	—	CMOS	2	2	1	23		38	x	x	x		x		VGC0900	IntCirSys		
1188	2	—	CMOS	2	2	1	27		46	x	x	x		x		VGC1200	IntCirSys		
1242	2.5	—	CMOS	2	2	1	27		46	x	x	x		x		VGC0500	IntCirSys		
1932	2.0	—	CMOS	2	2	1	35		58	x	x	x		x		VGC1900	IntCirSys		
2592	2.5	—	CMOS	2	2	1	39		70	x	x	x		x		VGC2400	IntCirSys		
3240	2.0	—	CMOS	2	2	1	43		78	x	x	x		x		VGC3200	IntCirSys		
4020	2.5	—	CMOS	2	2	1	47		86	x	x	x		x		VGC4000	IntCirSys		
6000	2.5	—	CMOS	2	2	1	55		106	x	x	x		x		VGC6000	IntCirSys		
Integrated Logic Systems																			15
1960	1.3	150	CMOS	1.5	2	1			48	x	x	x		x	RAM, ROM, PLA and Testability	CA1502	† ILSI		
5376	1.3	150	CMOS	1.5	2	1			74	x	x	x		x	RAM, ROM, PLA and Testability	CA1505	† ILSI		
10608	1.3	150	CMOS	1.5	2	1			102	x	x	x		x	RAM, ROM, PLA and Testability	CA1511	† ILSI		
20928	1.3	150	CMOS	1.5	2	1			140	x	x	x		x	RAM, ROM, PLA and Testability	CA1521	† ILSI		
30400	1.3	150	CMOS	1.5	2	1			168	x	x	x		x	RAM, ROM, PLA, and Testability	CA1530	† ILSI		
			CMOS	1.5	2	1			146	x	x	x		x	RAM, ROM, PLA and Testability	15GH-0304	† ILSI		
41568	1.3	150	CMOS	1.5	2	1			194	x	x	x		x	RAM, ROM, PLA and Testability	CA1542	† ILSI	20	
			CMOS	1.5	2	1			170	x	x	x		x	RAM, ROM, PLA and Testability	15GH-0416	† ILSI		
60368	1.3	150	CMOS	1.5	2	1			204	x	x	x		x	RAM, ROM, PLA and Testability	15GH-0604	† ILSI		
82560	1.3	150	CMOS	1.5	2	1			236	x	x	x		x	RAM, ROM, PLA and Testability	15GH-0826	† ILSI		
100512	1.3	150	CMOS	1.5	2	1			260	x	x	x		x	RAM, ROM, PLA and Testability	15GH-1005	† ILSI		
Intel																			25
2630	1.3	139	CMOS	1.5	2				64	x		x		x		D15A026	† Intel		
5200	1.3	139	CMOS	1.5	2				90	x		x		x		D15A052	† Intel		
6320	1.3	139	CMOS	1.5	2				118	x		x		x		D15R063	† Intel		
8540	1.3	139	CMOS	1.5	2				118	x		x		x		D15A085	† Intel		
12750	1.3	139	CMOS	1.5	2				144	x		x		x		D15A127	† Intel		
			CMOS	1.5	2				174	x		x		x		D15A130	† Intel	30	
International Microcircuits																			
12K	1.5	100	Si	1.5	2				190	x	x	x	x	x	1.5 micron CMOS, up to 800 usable gates, dual-level metallization, fully autoroutable.	IMI7000	† IMI	35	
38K	1	140	Si	1	2				224	x	x	x	x	x		IMI0000	† IMI		
800	1.54	100	CMOS	1.5		1	38			x	x	x							
825	0.75	100	CMOS	1.5	2				84	x				x		IMI7080	† IMI		
1500	0.75	100	CMOS	1.5	2				100	x				x		IMI708B	IMI		
1632	1.54	100	CMOS	1.5	2				78	x		x				IMI715B	IMI	40	
2232	1.54	100	CMOS	1.5	2				78	x		x				IMI7160	IMI		
2482	0.75	100	CMOS	1.5	2				122	x				x		IMI7220	IMI		
3432	1.54	100	CMOS	1.5	2				112	x		x				IMI724B	IMI		
3792	0.75	100	CMOS	1.5	2				148	x				x		IMI7340	IMI		
4900	1.54	100	CMOS	1.5	2				136	x		x				IMI738B	IMI	40	
6210	1.54	100	CMOS	1.5	2				158	x		x				IMI7490	IMI		
8000	1.54	100	CMOS	1.5	2				178	x		x				IMI7620	IMI		
																IMI7800	IMI		

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† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
International Microcircuits																			(Cont'd)
12000	0.75	100	CMOS	1.5	2				190	x					x		IMI712K	IMI	
16500	0.75	100	CMOS	1.5	2				222	x					x		IMI716K	IMI	
LSI Logic																			
Up to 23496	0.45	150	HCMOS	0.7	3	1			444	x	x	x			x	Channel-Free Array with cell-based customer-defined embedded cores.	LEA100K	† LSI Logic	
86k	0.35	150	HCMOS	1	2	1			270	x	x	x			x		LFT150086	† LSI Logic	
1443	1.1		HCMOS	1.5	2	1			86	x	x	x			x	Rad Hard Library, 200k RADs (Si), No Latch Up	LRH9140	‡ LSI Logic	5
1968	0.57		HCMOS	0.9	2					x		x			x		LMA9020	LSI Logic	
2653	0.54	60	BiCMOS	1.5	2	1			84	x	x	x	x	x	x		LDD10006	† LSI Logic	
3192	1.1		HCMOS	1.5	2	1			128	x	x	x			x	Rad Hard Library, 200k RADs (Si), No Latch Up	LRH9320	‡ LSI Logic	
3286	0.57		HCMOS	0.9	2					x		x			x		LMA9033	LSI Logic	
4304	0.54	60	BiCMOS	1.5	2	1			110	x	x	x	x	x	x		LDD10010	† LSI Logic	10
4992	0.57		HCMOS	0.9	2					x		x			x		LMA9050	LSI Logic	
6072	1.1		HCMOS	1.5	2	1			186	x	x	x			x	Rad Hard Library, 200k RADs (Si), No Latch Up	LRH9600	‡ LSI Logic	
6412	0.45	150	HCMOS	0.7	3	1			78	x	x	x			x	Channel-Free Array	LCA100006	† LSI Logic	
7238	0.57		HCMOS	0.9	2					x		x			x		LMA9072	LSI Logic	
8070	0.54	60	BiCMOS	1.5	2	1			144	x	x	x	x	x	x		LDD10019	† LSI Logic	15
8374	0.45	150	HCMOS	0.7	3	1			90	x	x	x			x	Channel-Free Array	LCA100008	† LSI Logic	
9504	0.57		HCMOS	0.9	2					x		x			x		LMA9095	† LSI Logic	
12592	0.54	60	BiCMOS	1.5	2	1			178	x	x	x	x	x	x		LDD10030	† LSI Logic	
14121	0.57		HCMOS	0.9	2					x		x			x		LMA9141	LSI Logic	
15286	0.45	150	HCMOS	0.7	3	1			116	x	x	x			x	Channel-Free Array	LCA100015	† LSI Logic	20
17028	0.54	60	BiCMOS	1.5	2	1			210	x	x	x	x	x	x		LDD10041	† LSI Logic	
19000	0.57		HCMOS	1.5	2					x		x			x		LMA9190	LSI Logic	
23020	0.45	150	HCMOS	0.7	3	1			158	x	x	x			x	Channel-Free Array	LCA100023	† LSI Logic	
23408	0.57		HCMOS	0.9	2					x		x			x		LMA9239	† LSI Logic	
25440	0.54	60	BiCMOS	1.5	2	1			256	x	x	x	x	x	x		LDD10062	† LSI Logic	25
25740	0.57		CMOS	1.5	2	1			148	x	x	x			x	Channel-Free Array	LCA10026	LSI Logic	
27740	0.57		HCMOS	1.5	2	1			148	x	x	x			x	Rad Hard Library, Channel-Free Array 1000k RADs (Si), No Latch Up			
28388	0.57		HCMOS	0.9	2					x		x			x		LRH10026	‡ LSI Logic	
33370	0.45		HCMOS	1	3	1			170	x	x	x			x		LMA9284	† LSI Logic	
34792	0.54	60	BiCMOS	1.5	2	1			256	x	x	x	x	x	x		LCA100033	† LSI Logic	30
37932	0.57		CMOS	1.5	2	1			184	x	x	x			x	Channel-Free Array	LDD10085	† LSI Logic	
			HCMOS	0.9	2					x		x			x		LCA10038	LSI Logic	
			HCMOS	1.5	2	1			184	x	x	x			x	Rad Hard Library, Channel-Free Array 1000k RADs (Si), No Latch Up	LMA9350	† LSI Logic	
44840	0.54	60	BiCMOS	1.5	2	1			256	x	x	x	x	x	x		LRH10038	‡ LSI Logic	
45880	0.45	150	HCMOS	0.7	3	1			198	x	x	x			x	Channel-Free Array	LDD10109	† LSI Logic	35
50904	0.5		HCMOS	1.5	2	1			234	x	x	x			x	Channel Free Array	LCA100046	† LSI Logic	
	0.59		HCMOS	1.5	2	1			214	x	x	x			x	1000 k Rad Hard Library - Channel Free Array	LCA10051	† LSI Logic	
66156	0.45	150	HCMOS	0.7	3	1			238	x	x	x			x	Channel-Free Array	LRH10051	‡ LSI Logic	
74970	0.57		HCMOS	1.5	2	1			282	x	x	x			x	Channel Free Array	LCA100066	† LSI Logic	
			HCMOS	1.5	2	1			262	x	x	x			x	1000 k Rad Hard Library - Channel Free Array	LCA10075	† LSI Logic	
83951	0.45		HCMOS	1	3	1											LRH10075	‡ LSI Logic	40
100182	0.57		CMOS	1.5	2	1			278	x	x	x			x	Channel-Free Array	LCA100084	† LSI Logic	
			HCMOS	1.5	2	1			326	x	x	x			x	Rad Hard Library, Channel-Free Array 1000k RADs (Si), No Latch Up	LCA100046	† LSI Logic	
			HCMOS	1.5	2	1			326	x	x	x			x		LCA10100	LSI Logic	
106218	0.45	150	HCMOS	0.7	3	1			298	x	x	x			x	Channel-Free Array	LRH10100	‡ LSI Logic	
109000	0.35	150	HCMOS	1	2	1			308	x	x	x			x		LCA100106	† LSI Logic	45
129042	0.57		HCMOS	1.5	2	1			x	x	x	x			x	Channel Free Array	LFT150109	† LSI Logic	
			HCMOS	1.5	2	1			348	x	x	x			x	1000 k Rad Hard Library - Channel Free Array	LCA10129	† LSI Logic	
135042	0.45		HCMOS	1	3	1				x	x	x			x		LRH10129	‡ LSI Logic	
147000	0.35	150	HCMOS	1	2	1			336	x	x	x			x		LCA100135	† LSI Logic	
181792	0.45		HCMOS	1	3	1			360	x	xx	x			x		LFT150147	† LSI Logic	
190000	0.35	150	HCMOS	1	2	1			388	x	x	x			x		LCA100182	† LSI Logic	50
234916	0.45		HCMOS	1	3	1			410	x	x	x			x		LCA100190	† LSI Logic	
			HCMOS	1	3	1			438	x	x	x			x		LFT150190	† LSI Logic	
																	LCA100235	† LSI Logic	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
Micro-C 1200	3	70	CMOS	1.2	2	1			58	x		x		x	User Programmable	2064-33/PC68C	Micro-C			
			CMOS	1.2	2	1			58	x		x		x	User Programmable	2064-50/PC68C	Micro-C			
			CMOS	1.2	2	1			58	x		x		x	User Programmable	2064-70/PC68C	Micro-C			
1800	3	70	CMOS	1.2	2	1			74	x		x		x	User Programmable	2018-33/PC84C	Micro-C			
Mitsubishi Electronics																				
224	0.9	175	CMOS	1.3	2	1	0	0	22	x	x	x		x	Gate Isolation Process	M60020	◊ Mitsubishi	5		
500	1.4	100	CMOS	2	2	1	0	0	64	x	x	x		x	Gate Isolation Process	M60011	◊ Mitsubishi			
507	0.9	175	CMOS	1.3	2	1	0	0	32	x	x	x		x	Gate Isolation Process	M60021	◊ Mitsubishi			
800	0.9	175	CMOS	1.3	2	1	0	0	42	x	x	x		x	Gate Isolation Process	M60022	◊ Mitsubishi			
810	1.4	100	CMOS	2	2	1	0	0	82	x	x	x		x	Gate Isolation Process	M60012	◊ Mitsubishi			
1100	1.4	100	CMOS	2	2	1	0	0	96	x	x	x		x	Gate Isolation Process	M60013	◊ Mitsubishi	10		
1104	0.9	175	CMOS	1.3	2	1	0	0	45	x	x	x		x	Gate Isolation Process	M60023	◊ Mitsubishi			
1680	1.4	100	CMOS	2	2	1	0	0	116	x	x	x		x	Gate Isolation Process	M60014	◊ Mitsubishi			
1773	0.9	175	CMOS	1.3	2	1	0	0	62	x	x	x		x	Gate Isolation Process	M60024	◊ Mitsubishi			
2000	0.9	175	CMOS	1.3	2	1			112	x	x	x		x	Gate Isolation Process	M60043	◊ Mitsubishi			
2400	0.9	175	CMOS	1.3	2	1	0	0	72	x	x	x		x	Gate Isolation Process	M60025	◊ Mitsubishi	15		
2666	1.4	100	CMOS	2	2	1	0	0	132	x	x	x		x	Gate Isolation Process	M60015	◊ Mitsubishi			
3000	0.37	329	CMOS		2	1			124	x	x	x		x	Gate Isolation	M60062	Mitsubishi	(3586)		
3200	0.9	175	CMOS	1.3	2	1			138	x	x	x		x	Gate Isolation Process	M60044	◊ Mitsubishi			
			CMOS	1.3	2	2	1	0	88	x	x	x		x	Gate Isolation Process	M60030	◊ Mitsubishi			
3608	1.4	100	CMOS	2	2	1	0	0	148	x	x	x		x	Gate Isolation Process	M60016	◊ Mitsubishi	20		
4000	0.37	320	CMOS		2	1			144	x	x	x		x	Gate Isolation	M60063	Mitsubishi			
4100	0.9	175	CMOS	1.3	2	1			164	x	x	x		x	Gate Isolation Process	M60045	◊ Mitsubishi			
			CMOS	1.3	2	2	1	0	110	x	x	x		x	Gate Isolation Process	M60031	◊ Mitsubishi			
4814	1.4	100	CMOS	2	2	1	0	0	176	x	x	x		x	Gate Isolation Process	M60017	◊ Mitsubishi			
5000	0.37	320	CMOS		2	1			112	x	x	x		x	Gate Isolation	M60050	◊ Mitsubishi	(3586)		
				CMOS		2	1			144	x	x	x		x	Gate Isolation	M60064	Mitsubishi	(3586)	
6000	.370	320	CMOS	1.0	2	1			120	x	x	x		x		M60051	◊ Mitsubishi	(3586)		
									128	x	x	x		x	Gate Isolation	M60052	Mitsubishi	(3586)		
			CMOS		2	1			144	x	x	x		x	Gate Isolation	M60065	Mitsubishi	(3586)		
6233	1.4	100	CMOS	2	2	1	0	0	178	x	x	x		x	Gate Isolation Process	M60018	◊ Mitsubishi	30		
6300	0.9	175	CMOS		2	1			180	x	x	x		x	Gate Isolation	M60047	◊ Mitsubishi			
			CMOS	1.3	2	2	1	0	132	x	x	x		x	Gate Isolation Process	M60032	◊ Mitsubishi			
8000	0.37	320	CMOS		2	1			144	x	x	x		x	Gate Isolation	M60066	Mitsubishi	(3586)		
8096	1.4	100	CMOS	2	2	1	0	0	190	x	x	x		x	Gate Isolation Process	M60019	◊ Mitsubishi			
8400	0.9	175	CMOS		2	1			184	x	x	x		x	Gate Isolation	M60049	Mitsubishi	35		
			CMOS	1.3	2	2	1	0	180	x	x	x		x	Gate Isolation Process	M60034	◊ Mitsubishi			
10000	0.37	320	CMOS		2	1			150	x	x	x		x	Gate Isolation	M60053	◊ Mitsubishi	(3586)		
			CMOS		2	1			192	x	x	x		x	Gate Isolation	M60067	Mitsubishi	(3586)		
11000	0.9	175	CMOS	1.3	2	2	1	0	196	x	x	x		x	Gate Isolation Process	M60035	◊ Mitsubishi			
12000	0.37	320	CMOS	1.0	2	1			166	x	x	x		x		M60054	◊ Mitsubishi	(3586)		
15000	0.5	320	CMOS	1	2	1			154	x	x	x		x	Gate Isolation Process	M60055	◊ Mitsubishi	(3586)		
20000	0.9	175	CMOS	1.3	2	2	1	0	256	x	x	x		x	Gate Isolation Process	M60037	◊ Mitsubishi			
25000	0.5	320	CMOS	1	2	1			212	x	x	x		x	Gate Isolation Process	M60056	◊ Mitsubishi	(3586)		
35000	0.5	320	CMOS	1	2	1			256	x	x	x		x	Gate Isolation Process	M60057	◊ Mitsubishi	(3586)		
Motorola																				
848	0.15	1000	ECL	1.5	3		28		42		x	x	x	x	mixed ECL/TTL interface	MCA750ETL	◊ Motorola	45		
902	0.5	770	ECL	2	2				18					x		MCA800ECL	Motorola			
957	1.1	85	CMOS	2	2					x	x	x				HCA62A10	Motorola			
1638	1.1	85	CMOS	2	2					x	x	x				HCA62A17	Motorola			
1708	0.5	770	ECL	3	3				120					x	Macrocell array	MCA1500M	Motorola			
2200	0.12 *	800	MOSAIC II																	
2448	1.1	85	CMOS	2	2					x	x	x				MCA2200ECL	Motorola	50		
3036	0.25 *	500	CMOS	1	3			88	x	x	x	x				HCA62A25 HDC003	Motorola Motorola			

(Continued)

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† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells		Input/Output Compatibility						Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State				
(Cont'd)																		
Motorola																		
3570	.015	1000	ECL	1.5	3				120		x	x	x	x	Pseudo ECL option	MCA3200ETL	Motorola	5
3600	1.1	85	CMOS	2	2					x	x	x				HCA62A36	Motorola	
4968	1.1	85	CMOS	2	2					x	x	x				HCA62A50	Motorola	
5670	0.25	500	CMOS	1	3				120	x	x	x		x		HDC006	Motorola	
6708	1.1	85	CMOS	2	2				146	x	x	x			Macrocell Array mixed ECL/TTL interface	HCA62A67	Motorola	
6915	0.15	1000	ECL	1.5	3				168		x	x	x	x		MCA6200ETL	Motorola	
8208	0.25 *		CMOS	1	3				108	x		x	x			HDC008	Motorola	
8568	2.8		HC MOS	2	2					x	x	x				HCA62A85	Motorola	
10332	0.175	1200	ECL	2	2		168	200					x		Macrocell Array triple layer routing	MCA10000ECL	Motorola	
11208	0.25	250	CMOS	1.0	3				160	x	x	x		x		HDC027	Motorola	
		500	CMOS	1	3				168	x	x	x		x		HDC011	Motorola	10
16416	0.25 *		CMOS	1	3				136	x		x		x		HDC016	Motorola	15
31290	0.25 *		CMOS	1	3				180	x		x		x		HDC031	Motorola	
49368	0.25	250	CMOS	1.0	3				208	x	x	x		x	triple layer routing	HDC049	Motorola	
63900	0.25	500	CMOS	1	3				400	x	x	x		x		HDC064	Motorola	
104832	0.25	500	CMOS	1	3				512	x	x	x		x		HDC105	Motorola	
National Semiconductor																		
399	0.65	900	CMOS	1.5	1				28	x		x		x		SCX6B04	National	20
540	1.1	50	CMOS	2	2	1	0		40	x	x	x		x	All CMOS 2-Micron Silicon Gate	FGC0500	National	
600	2.1	110	CMOS	2	2		8		40	x	x	x		x		SCX6206	National	
864	1.1	50	CMOS	2	2		23		38	x	x	x		x		FGC0900	National	
1020	0.65	900	CMOS	1.5	1				48	x		x		x		SCX6B10	National	
1188	1.1	50	CMOS	2	2	1	27		46	x	x	x		x	On-Chip Test Capability	FGC1200	National	
1260	2.1	110	CMOS	2	2		17		42	x	x	x		x		SCX6212	National	
	3.5	66	CMOS	3	2	1	17		42	x	x	x		x		SCX6312	National	
1806	2.1	110	CMOS	2	2		3		70	x	x	x		x		SCX6218	National	
1932	1.1	50	CMOS	2	2		32		57	x	x	x		x		FGC1900	National	
2058	0.65	900	CMOS	1.5	1				68	x		x		x		SCX6B21	National	25
2385	2.1	110	CMOS	2	2		55		56	x	x	x		x		SCX6224	National	
	3.5	66	CMOS	3	2	1	55		56	x	x	x		x		SCX6324	National	
2430	2.1	110	CMOS	2	2		12		76	x	x	x		x		SCX6225	National	
2500	0.75	600	ECL	1.5	2		60		60			x	x			FGE2000	National	
2625	1.1	50	CMOS	2	2	1	39		70	x	x	x		x		FGC2400	National	30
3111	0.65	900	CMOS	1.5	1				84	x		x		x		SCX6B31	National	
3180	2.1	110	CMOS	2	2		3		101	x	x	x		x		SCX6232	National	
4380	2.1	110	CMOS	2	2		3		110	x	x	x		x		SCX6244	National	
4788	0.65	900	CMOS	1.5	1				104	x		x		x		SCX6B48	National	
6260	2.1	110	CMOS	2	2		66		88	x	x	x		x		SCX6260	National	
6336	0.65	900	CMOS	1.5	1				120	x		x		x		SCX6B64	National	
8586	0.65	900	CMOS	1.5	1				144	x		x		x		SCX6B86	National	
11904	0.65	900	CMOS	1.5	1				176	x		x		x		SCX6B120	National	
21000	0.5	75	CMOS	0.8	2	1			84	x	x	x		x		FLX1021	National	
38000	0.5	75	CMOS	0.8	2	1			124	x	x	x		x		FLX1038	National	35
56000	0.5	75	CMOS	0.8	2	1			152	x	x	x		x		FLX1056	National	
80000	0.5	75	CMOS	0.8	2	1			188	x	x	x		x		FLX1080	National	
122000	0.5	75	CMOS	0.8	2	1			232	x	x	x		x		FLX1120	National	
160000	0.5	75	CMOS	0.8	2	1			268	x	x	x		x		FLX1160	National	
207000	0.5	75	CMOS	0.8	2	1			308	x	x	x		x		FLX1200	National	
252000	0.5	75	CMOS	0.8	2	1			340	x	x	x		x		FLX1250	National	
NCM Corporation																		
3003	10	5	CMOS	7.5	1M				35	x	x	x		x	40 pads	NCM300XZ	NCM	50
70015	3	12	CMOS	5	1M	1P			58	x	x	x		x	62 pads	NCM7001XZ	NCM	
NEC Electronics																		
320	0.9	70	CMOS	1.5	2				54	x		x		x	High Drive, High I/O count.	μPD65005	NEC	55
504	0.9	70	CMOS	1.5	2				62	x		x		x	High Drive, High I/O count.	μPD65006	NEC	
600	0.14	1600	ECL	1.2	3		88	48	88				x			μPB6303	NEC	
624	0.67	200	BiCMOS	1.5	2				64	x	x			x		μPD67001	NEC	
858	10	12	CMOS	1.5	2				62	x				x	Battery Supply 1V to 3.6V	μPD65007	NEC	
1088	0.9	70	CMOS	1.5	2				82	x		x		x	High Drive, High I/O count.	μPD65012	NEC	
1124	0.67	200	BiCMOS	1.5	2				84	x	x			x		μPD67010	NEC	
1152	0.46	100	CMOS	1.2	2				94	x	x	x		x		μPD65015	NEC	
1200	0.14	1600	ECL	1.2	3		108	48	108				x			μPB6312	NEC	
1584	0.9	70	CMOS	1.5	2				100	x		x		x	High Drive, High I/O count.	μPD65013	NEC	
1656	10	12	CMOS	1.5	2				82	x		x		x	Battery Supply 1V to 3.6V	μPD65014	NEC	60
1680	0.46	100	CMOS	1.2	2				108	x	x	x		x		μPD65016	NEC	
2016	0.56	100	CMOS	1.2	2				79	x		x		x		μPD65025	NEC	
2128	0.9	70	CMOS	1.5	2				82	x		x		x		μPD65022	NEC	
2208	0.45	200	BiCMOS	5														
				1.3	2				80	x	x	x	x	x		μPD67021	NEC	65
2240	0.9	70	CMOS	1.5	2				120	x		x		x	2304 RAM bits included.	μPD65023	NEC	

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‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

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ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
NEC Electronics																			(Cont'd)	
2242	0.9	70	CMOS	1.5	2				104	x		x		x	High Drive, High I/O count.	µPD65024	◊ NEC	5		
2248	0.67	200	BiCMOS	1.5	2				120	x	x			x		µPD67020	◊ NEC			
2340	0.46	100	CMOS	1.2	2				120	x	x	x		x		µPD65029	◊ NEC			
	0.56	100	CMOS	1.2	2				116	x	x	x		x	High I/O	µPD65027	◊ NEC			
2400	0.15	1400	ECL	1.2	3		102	62	102		x	x	x	x		µPB63020	NEC	10		
	0.5	450	ECL	1.4	3				108		x	x	x			µPB6323	NEC			
2457	10	12	CMOS	1.5	2				100	x				x	Battery Supply 1V to 3.6V	µPD65026	◊ NEC	15		
3140	0.67	200	BiCMOS	1.5	2				140	x	x			x		µPD67030	◊ NEC			
3240	0.45	200	BiCMOS	1.3	2				96	x	x	x	x	x		µPD67031	◊ NEC			
3360	10	12	CMOS	1.5	2				106	x				x	Battery Supply 1V to 3.6V	µPD65033	◊ NEC			
3366	0.56	100	CMOS	1.2	2				128	x	x	x		x	High I/O	µPD65034	◊ NEC			
	100	250	CMOS	1.2	2				96	x		x		x		µPD65032	◊ NEC			
3575	0.9	70	CMOS	1.5	2				106	x				x		µPD65031	◊ NEC	20		
4000	0.15	1400	ECL	1.2	3		140	84	152		x	x	x			µPB63040	NEC			
	0.5	450	ECL	1.4	3				156		x	x	x			µPB6341	NEC			
4320	10	12	CMOS	1.5	2				120	x				x	Battery Supply 1V to 3.6V -5	µPD65045	◊ NEC	25		
4440	0.56	100	CMOS	1.2	2				108	x		x		x		µPD65044	◊ NEC			
			CMOS	1.2	2				142	x	x	x		x	High I/O	µPD65046	◊ NEC			
	0.9	70	CMOS	1.5	2				180	x		x		x	4608 RAM bits included.	µPD65043	◊ NEC			
4727	0.9	70	CMOS	1.5	2				120	x		x		x		µPD65042	◊ NEC	30		
5000	0.5	450	ECL	1.4	3				172		x	x	x			µPB6351	NEC			
5292	0.56	100	CMOS	1.2	2				120	x		x		x		µPD65051	◊ NEC			
			CMOS	1.2	2				142	x	x	x		x	High I/O	µPD65053	◊ NEC			
5320	0.45	300	BiCMOS	1.3	2				124	x	x		x	x		µPD67050	◊ NEC	35		
5376	0.27	120	CMOS	1	2				84	x				x		µPD65630	◊ NEC			
5544	0.4	200	CMOS-6V	1	2				156	x		x		x		µPD65631	NEC			
5632	10	12	CMOS	1.5	2				138	x				x	Battery Supply 1V to 3.6V -6	µPD65052	◊ NEC			
5742	0.9	70	CMOS	1.5	2				138	x		x		x		µPD65050	◊ NEC			
6000	0.15	1400	ECL	1.2	3		174	90	174		x	x	x			µPB63060	NEC			
6348	0.56	100	CMOS	1.2	2				124	x		x		x		µPD65061	◊ NEC	40		
			CMOS	1.2	2				142	x	x	x		x	High I/O	µPD65062	◊ NEC			
6372	0.67	200	BiCMOS	1.5	2				180	x	x			x		µPD67060	◊ NEC			
7164	0.9	70	CMOS	1.5	2				144	x		x		x		µPD65070	◊ NEC			
7216	0.45	300	BiCMOS	1.3	2				148	x	x		x	x		µPD67070	◊ NEC	45		
7500	0.56	100	CMOS	1.2	2				140	x		x		x		µPD65071	◊ NEC			
			CMOS	1.2	2				142	x	x	x		x	High I/O	µPD65072	◊ NEC			
8000	0.15	1400	ECL	1.2	3		200	103	204		x	x	x			µPB63080	NEC			
	0.27	120	CMOS	1	2				100	x				x		µPD65636	◊ NEC	50		
8462	0.27	2300	ECL	0.9	3				102			x	x			µPD63020	◊ NEC			
8510	0.9	70	CMOS	1.5	2				168	x		x		x		µPD65081	◊ NEC			
8748	0.56	100	CMOS	1.2	2				148	x		x		x		µPD65082	◊ NEC			
10152	0.45	300	BiCMOS	1.3	2				176	x	x		x	x		µPD67101	◊ NEC			
10348	0.67	200	BiCMOS	1.5	2				228	x	x			x		µPD67100	◊ NEC			
10496	0.9	70	CMOS	1.5	2				186	x		x		x		µPD65101	◊ NEC			
10800	0.56	100	CMOS	1.2	2				160	x		x		x		µPD65103	◊ NEC			
11520	0.27	120	CMOS	1	2				120	x				x		µPD65640	◊ NEC			
	0.4	200	CMOS-6V	1	2				176	x		x		x		µPD65641	NEC			
13890	0.27	2300	ECL	0.9	3				140			x	x			µPD63040	◊ NEC	55		
14040	0.4	200	CMOS-6V	1	2				176	x		x		x		µPD65644	NEC			
14256	0.56	100	CMOS	1.2	2				188	x		x		x		µPD65140	◊ NEC			
14943	0.9	70	CMOS	1.5	2				214	x		x		x		µPD65150	◊ NEC			
16240	0.27	120	CMOS	1	2				140	x				x		µPD65646	◊ NEC			
	0.4	200	CMOS-6V	1	2				176	x		x		x		µPD65647	NEC			
18144	0.56	100	CMOS	1.2	2				214	x		x		x		µPD65180	◊ NEC	60		
18600	0.4	200	CMOS-6V	1	42				176	x		x		x		µPD65648	NEC			
19551	0.9	70	CMOS	1.5	2				246	x		x		x		µPD65200	◊ NEC			
21120	0.27	120	CMOS	1	2				160	x				x		µPD65650	◊ NEC			
	0.4	200	CMOS-6V	1	2				236	x		x		x		µPD65651	NEC	(Continued)		
21228	0.27	2300	ECL	0.9	3				174			x	x			µPD63060	◊ NEC			
24000	0.56	100	CMOS	1.2	2				246	x		x		x		µPD65240	◊ NEC			
24528	0.45	300	BiCMOS	1.3	2				272	x	x		x	x		µPD67240	◊ NEC			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State				
NEC Electronics																		(Cont'd)
26640	0.4	200	CMOS-6V	1	2				236	x		x		x		µPD65652	NEC	
28360	0.27	2300	ECL	0.9	3				200			x	x			µPD63080	NEC	
30600	0.56	100	CMOS	1.2	3				246	x			x			µPD65300	NEC	
30720	0.27	120	CMOS	1	2				192	x						µPD65654	NEC	
	0.4	200	CMOS-6V	1	2				236	x			x			µPD65655	NEC	5
35636	0.27	2300	ECL	0.9	3				236				x	x		µPD63100	NEC	
42240	0.45	200	CMOS-6	1	3				236	x	x		x			µPD65658	NEC	
45012	0.56	100	CMOS	1.2	3				246	x			x			µPD65450	NEC	
60500	0.3	300	CMOS-7	0.8	3				220	x			x			µPD65762	NEC	
72576	0.45	200	CMOS-6	1	3				304	x	x		x			µPD65664	NEC	10
103680	0.3	300	CMOS-7	0.8	3				288	x			x			Upd65770	NEC	
119232	0.45	200	CMOS-6	1	3				384	x	x		x			µPD65672	NEC	
169280	0.3	300	CMOS-7	0.8	3				368	x			x			µPD65776	NEC	
177408	0.27	120	CMOS	1	3				448	x				x		µPD65676	NEC	
	0.45	200	CMOS-6	1	3				464	x	x		x			µPD67676	NEC	15
250880	0.3	300	CMOS-7	0.8	3				448	x			x			µPD65782	NEC	
OKI Semiconductor																		
301	2.2	65	CMOS	2	2	1			32	x	x		x		Hi Density/Low I/O Option	7H003	OKI	
522	2.2	65	CMOS	2	2	1			40	x	x		x		Hi Density/Low I/O Option	7H005	OKI	
700	1.4	120	CMOS	1.5	2	1			74	x	x		x		Channelled Gate Array	70V000	OKI	
	2.2	65	CMOS	2	2	1			70	x	x		x		16/48mA Outputs	70HB000	OKI	20
			CMOS	2	2	1			74	x	x		x		Channelled Gate Array	70H000	OKI	
748	2.2	65	CMOS	2	2	1			48	x	x		x		Hi Density/Low I/O Option	7H007	OKI	
1000	1.4	120	CMOS	1.5	2	1			74	x	x		x		Channelled Gate Array	71V000	OKI	
	2.2	65	CMOS	2	2	1			70	x	x		x		16/48mA Outputs	71HB000	OKI	
			CMOS	2	2	1			x	x	x		x		Channelled Gate Array	71H000	OKI	25
1001	2.2	65	CMOS	2	2	1			56	x	x		x		Hi Density/Low I/O Option	7H010	OKI	
1440			3	2												MSM73000	OKI	
1568	1.4	120	CMOS	1.5	2	1			74	x	x		x		Channelled Gate Array	72V000	OKI	
	2.2	65	CMOS	2	2	1			70	x	x		x		16/48mA Outputs	72HB000	OKI	
			CMOS	2	2	1			x	x	x		x		Channelled Gate Array	72H000	OKI	30
1632	0.51	400	CMOS	1.2	2	1			60	x	x		x			7U016	OKI	
2000			3	2												MSM74000	OKI	
	1.4	120	CMOS	1.5	2	1			88	x	x		x		Channelled Gate Array	73V000	OKI	
	2.2	65	CMOS	2	2	1			84	x	x		x		16/48mA Outputs	73HB000	OKI	
			CMOS	2	2	1			x	x	x		x		Channelled Gate Array	73H000	OKI	35
2400	1.4	120	CMOS	1.5	2	1			88	x	x		x		Channelled Gate Array	74V000	OKI	
	2.2	65	CMOS	2	2	1			84	x	x		x		16/48mA Outputs	74HB000	OKI	
			CMOS	2	2	1			88	x	x		x		Channelled Gate Array	74H000	OKI	
2440	0.51	400	CMOS	1.2	2	1			72	x	x		x			7U024	OKI	
3000			2	2												MSM79H000	OKI	
3289	1.4	120	CMOS	1.5	2	1			94	x	x		x		Channelled Gate Array	79V000	OKI	
	2.2	65	CMOS	2	2	1			98	x	x		x		16/48mA Outputs	79HB000	OKI	
			CMOS	2	2	1			94	x	x		x		Channelled Gate Array	79H000	OKI	40
3312	0.51	400	CMOS	1.2	2	1			84	x	x		x			7U033	OKI	
4000			2	2												MSM75H000	OKI	
			3	2												MSM7500	OKI	45
4256	0.51	400	CMOS	1.2	2	1			96	x	x		x			7U042	OKI	
4290	1.4	120	CMOS	1.5	2	1			112	x	x		x		Channelled Gate Array	75V000	OKI	
	2.2	65	CMOS	2	2	1			114	x	x		x		16/48mA Outputs	75HB000	OKI	
			CMOS	2	2	1			112	x	x		x		Channelled Gate Array	75H000	OKI	50
5500	0.43	500	CMOS	1.2	2	1			68	x	x		x		Sea-of-Gate Gate Array	10U0055	OKI	
	0.64	265	CMOS	1.5	2	1			68	x	x		x		Sea-of-Gate Gate Array	10V0055	OKI	
5544	0.34	300	CMOS	1	2	1			68	x			x			MSM10T0055	OKI	(3607)
6000			2	2												MSM76H000	OKI	
	1.4	120	CMOS	1.5	2	1			138	x	x		x		Channelled Gate Array	76V000	OKI	
	2.2	65	CMOS	2	2	1			138	x	x		x		Channelled Gate Array	76H000	OKI	55
	2.5	100	CMOS	2	2				x	x			x		5.5K GATES + 2 (32x8) RAMS	92H600	OKI	
(Continued)																		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv.	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
OKI Semiconductor																		(Cont'd)		
6080	0.51	400	CMOS	1.2	2	1			114	x	x	x		x		7U060	OKI	5		
8000				2	2											MSM77H000	OKI			
8118	1.4	120	CMOS	1.5	2	1			178	x	x	x		x	Channelled Gate Array	77V000	OKI			
	2.2	65	CMOS	2	2	1			178	x	x	x		x	Channelled Gate Array	77H000	OKI			
8132	0.51	400	CMOS	1.2	2	1			130	x	x	x		x		7U081	OKI	10		
10000				2	2											MSM78H000	OKI			
10008	1.4	120	CMOS	1.5	2	1			188	x	x	x		x	Channelled Gate Array	78V000	OKI			
	2.2	65	CMOS	2	2	1			188	x	x	x		x	Channelled Gate Array	78H000	OKI			
	2.5	100	CMOS	2	2				x	x		x		x	8.9K GATES + 5 (32x8) RAMS	92H800	OKI			
10332	0.51	400	CMOS	1.2	2	1			148	x	x	x		x		7U100	OKI	15		
10600	0.43	500	CMOS	1.2	2	1			90	x	x	x		x	Sea-of-Gate Gate Array	10U0106	OKI			
	0.64	265	CMOS	1.5	2	1			90	x	x	x		x	Sea-of-Gate Gate Array	10V0106	OKI			
10608	0.34	300	CMOS	1	2	1			90	x		x		x		MSM10T0106	OKI	(3607)		
10800	0.31	500	CMOS	0.8	2	1			200	x		x		x		MSM10S0110	OKI			
13152	0.34	300	CMOS	1	2	1			98	x		x		x		MSM10T0132	OKI			
13200	0.43	500	CMOS	1.2	2	1			98	x	x	x		x	Sea-of-Gate Gate Array	10U0132	OKI	20		
	0.64	265	CMOS	1.5	2	1			98	x	x	x		x	Sea-of-Gate Gate Array	10V0132	OKI			
15402	0.51	400	CMOS	1.2	2	1			188	x	x	x		x		7U150	OKI			
17500	0.43	500	CMOS	1.2	2	1			112	x	x	x		x	Sea-of-Gate Gate Array	10U0175	OKI	25		
	0.64	265	CMOS	1.5	2	1			112	x	x	x		x	Sea-of-Gate Gate Array	10V0175	OKI			
17536	0.34	300	CMOS	1	2	1			112	x		x		x		MSM10T0175	OKI			
20300	0.51	400	CMOS	1.2	2	1			206	x	x	x		x		7U200	OKI	(3607)		
20900	0.43	500	CMOS	1.2	2	1			122	x	x	x		x	Sea-of-Gate Gate Array	10U0209	OKI			
	0.64	265	CMOS	1.5	2	1			122	x	x	x		x	Sea-of-Gate Gate Array	10V0209	OKI			
20928	0.34	300	CMOS	1	2	1			122	x		x		x		MSM10T0209	OKI	(3607)		
26160	0.34	300	CMOS	1	2	1			136	x		x		x		MSM10T0262	OKI			
26200	0.43	500	CMOS	1.2	2	1			136	x	x	x		x	Sea-of-Gate Gate Array	10U0262	OKI			
	0.64	265	CMOS	1.5	2	1			136	x	x	x		x	Sea-of-Gate Gate Array	10V0262	OKI	30		
30300	0.31	500	CMOS	0.8	2	1			320	x		x		x		MSM10S0300	OKI			
30384	0.51	400	CMOS	1.2	2	1			252	x	x	x		x		7U300	OKI			
30400	0.34	300	CMOS	1	2	1			146	x		x		x		MSM10T0304	OKI			
	0.43	500	CMOS	1.2	2	1			146	x	x	x		x	Sea-of-Gate Gate Array	10U0304	OKI			
	0.64	265	CMOS	1.5	2	1			146	x	x	x		x	Sea-of-Gate Gate Array	10V0304	OKI			
41568	0.34	300	CMOS	1	2	1			170	x		x		x		MSM10T0416	OKI	(3607)		
41600	0.43	500	CMOS	1.2	2	1			170	x	x	x		x	Sea-of-Gate Gate Array	10U0416	OKI			
	0.64	265	CMOS	1.5	2	1			170	x	x	x		x	Sea-of-Gate Gate Array	10V0416	OKI			
53750	0.31	500	CMOS	0.8	2	1			420	x		x		x		MSM10S0540	OKI	(3607)		
60368	0.34	300	CMOS	1	2	1			204	x		x		x		MSM10T0604	OKI			
60400	0.43	500	CMOS	1.2	2	1			204	x	x	x		x	Sea-of-Gate Gate Array	10U0604	OKI			
	0.64	265	CMOS	1.5	2	1			204	x	x	x		x	Sea-of-Gate Gate Array	10V0604	OKI	40		
82560	0.34	300	CMOS	1	2	1			236	x		x		x		MSM10T0826	OKI			
82600	0.43	500	CMOS	1.2	2	1			236	x	x	x		x	Sea-of-Gate Gate Array	10U0826	OKI			
	0.64	265	CMOS	1.5	2	1			236	x	x	x		x	Sea-of-Gate Gate Array	10V0826	OKI			
88980	0.31	500	CMOS	0.8	2	1			544	x		x		x		MSM10S0890	OKI	(3607)		
100500	0.43	500	CMOS	1.2	2	1			260	x	x	x		x	Sea-of-Gate Gate Array	10U1005	OKI			
	0.64	265	CMOS	1.5	2	1			260	x	x	x		x	Sea-of-Gate Gate Array	10V1005	OKI			
100512	0.34	300	CMOS	1	2	1			260	x		x		x		MSM10T1005	OKI	(3607)		
117660	0.31	500	CMOS	0.8	2	1			612	x		x		x		MSM10S1180	OKI			
183414	0.31	500	CMOS	0.8	2	1			760	x		x		x		MSM10S1830	OKI			
231920	0.31	500	CMOS	0.8	2	1			852	x		x		x		MSM10S2320	OKI	50		
Panasonic																				
300	1.4	50	CMOS	1.5	2	1	42	42	2	x	x	x		x	High Drive = 12 mA	MN53003	OKI	55		
500	1.4	50	CMOS	1.5	2	1	50	50	2	x	x	x		x	High Drive = 12 mA	MN53005	OKI			
700	1.4	50	CMOS	1.5	2	1	58	58	2	x	x	x		x	High Drive = 12 mA	MN53007	OKI			
1000	1.4	50	CMOS	1.5	2	1	64	64	4	x	x	x		x	High Drive = 12 mA	MN53010	OKI			
1500	1.4	50	CMOS	1.5	2	1	78	78	6	x	x	x		x	High Drive = 12 mA	MN53015	OKI			
2000	0.6	80	CMOS	1.2	2	1	92	92	8	x	x	x		x		MN56020	OKI			
			CMOS	1.2	2	1	107	107	8	x	x	x		x		MN59020	OKI			
	1.4	50	CMOS	1.5	2	1	90	90	4	x	x	x		x	High Drive = 12 mA	MN53020	OKI			
2040	1.4	50	CMOS	1.5	2	1	108	108	8	x	x	x		x		MN55020	OKI	60		
3000	0.6	80	CMOS	1.2	2	1	90	90	10	x	x	x		x	Sea of Gate, High Drive	MN56E03	OKI			
			CMOS	1.2	2	1	112	112	8	x	x	x		x		MN56030	OKI			
	1.4	50	CMOS	1.5	2	1	108	108	8	x	x	x		x	High Drive = 12 mA	MN53030	OKI			
(Continued)																				

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
(Cont'd)																			
Panasonic																			
4000	0.6	80	CMOS	1.2	2	1	148	148	8	x	x	x		x				(Cont'd)	
	1.4	50	CMOS	1.5	2	1	124	124	8	x	x	x		x		High Drive = 12 mA	MN59040 MN53040	◊ Panasonic ◊* Panasonic	
4435	0.6	80	CMOS	1.2	2	1	92	92	8	x	x	x		x			MN56A04	◊ Panasonic	
5000	0.6	80	CMOS	1.2	2	1	134	134	10	x	x	x		x			MN56050	◊ Panasonic	
5352	1.4	50	CMOS	1.5	2	1	180	180	16	x	x	x		x			MN55040	◊ Panasonic	
6000	0.6	80	CMOS	1.2	2	1	118	118	10	x	x	x		x		Sea of Gate, High Drive	MN56E06	◊ Panasonic	
	1.4	50	CMOS	1.5	2	1	152	152	16	x	x	x		x		High Drive = 12 mA	MN53060	◊* Panasonic	
7000	0.6	80	CMOS	1.2	2	1	158	158	10	x	x	x		x			MN56070	◊ Panasonic	
7257	0.6	80	CMOS	1.2	2	1	112	112	8	x	x	x		x			MN56A07	◊ Panasonic	
8000	0.6	80	CMOS	1.2	2	1	208	208	10	x	x			x			MN59080	◊ Panasonic	
	1.4	50	CMOS	1.5	2	1	180	180	16	x	x	x		x		High Drive = 12 mA	MN53080	◊* Panasonic	
10000	0.6	80	CMOS	1.2	2	1	148	148	12	x	x	x		x		Sea of Gate, High Drive	MN56E10	◊ Panasonic	
			CMOS	1.2	2	1	186	186	10	x	x	x		x			MN56100	◊ Panasonic	
			CMOS	1.2	2	1	232	232	10	x	x			x			MN59100	◊ Panasonic	
	1.4	50	CMOS	1.5	2	1	198	198	16	x	x	x		x		High Drive = 12 mA	MN53100	◊* Panasonic	
11923	0.6	80	CMOS	1.2	2	1	134	134	10	x	x	x		x			MN56A12	◊ Panasonic	
15000	0.6	80	CMOS	1.2	2	1	210	210	10	x	x	x		x			MN56150	◊ Panasonic	
			CMOS	1.2	2	1	256	256	10	x	x			x			MN59150	◊ Panasonic	
	1.4	50	CMOS	1.5	2	1	238	238	20	x	x	x		x		High Drive = 12 mA	MN53150	◊* Panasonic	
17740	0.6	80	CMOS	1.2	2	1	158	158	10	x	x	x		x			MN56A18	◊ Panasonic	
20000	0.6	80	CMOS	1.2	2	1	238	238	10	x	x	x		x			MN56200	◊ Panasonic	
	1.4	50	CMOS	1.5	2	1	256	256	24	x	x	x		x		High Drive = 12 mA	MN53200	◊* Panasonic	
25000	0.6	80	CMOS	1.2	2	1	256	256	10	x	x	x		x			MN56250	◊ Panasonic	
25596	0.6	80	CMOS	1.2	2	1	186	186	10	x	x	x		x			MN56A25	◊ Panasonic	
30000	0.6	80	CMOS	1.2	2	1	256	256	10	x	x	x		x			MN56300	◊ Panasonic	
33852	0.6	80	CMOS	1.2	2	1	210	210	10	x	x	x		x			MN56A34	◊ Panasonic	
44856	0.6	80	CMOS	1.2	2	1	238	238	10	x	x	x		x			MN56A45	◊ Panasonic	
57208	0.6	80	CMOS	1.2	2	1	256	256	10	x	x	x		x			MN56A57	◊ Panasonic	
69264	0.6	80	CMOS	1.2	2	1	256	256	10	x	x	x		x			MN56A69	◊ Panasonic	
Performance Semiconductor Corp.																			
11000	0.5	250	CMOS	0.8	2	1	x	x	x	x				x		CMOS I/O Now TTL I/O Later	P9CG11000	Performance	
Plus Logic																			
1K-2K	7.5	40	TTL	1.5	2				30			x		x		Field Programmable Gate Array	FPGA2010-40C	◊* Plus Logic	
			TTL	1.5	2				30			x		x		Field Programmable Gate Array	FPGA2010-40M	◊*† Plus Logic	
2K-4K	7.5	40	TTL	1.5	2				40			x		x		Field Programmable Gate Array	FPGA2020-40C	◊* Plus Logic	
			TTL	1.5	2				40			x		x		Field Programmable Gate Array	FPGA2020-40M	◊*† Plus Logic	
Raytheon Semiconductor																			
4584	0.4		ECL	2	2	1			120			x	x				CGA1ME12	Raytheon	
7128	0.3*	600	ECL						180			x	x	x			CGA70E18	† Raytheon	
8001	0.3	1200	BIP	2	2				120			x	x				CGA40E12	Raytheon	
Ricoh																			
560	1.5		Si-Gate CMOS		2				40	x	x	x		x			RP5GH05	Ricoh	
1000	1.5		Si-Gate CMOS		2				60	x	x	x		x			RP5GH10	Ricoh	
1600	1.5		Si-Gate CMOS		2				72	x	x	x		x			RP5GH16	Ricoh	
2300	1.5		Si-Gate CMOS		2				88	x	x	x		x			RP5GH23	Ricoh	
2900	1.5		Si-Gate CMOS		2				98	x	x	x		x			RP5GH29	Ricoh	
3800	1.5		Si-Gate CMOS		2				108	x	x	x		x			RP5GH38	Ricoh	
5500	1.5		Si-Gate CMOS		2				120	x	x	x		x			RP5GH55	Ricoh	
S-MOS Systems																			
820	2	60	CMOS	3	2	1	6		54	x	x	x		x		Silicon gate	SLA6080	S-MOS	
1394	2	60	CMOS	3	2	1	6		68	x	x	x		x		Silicon gate	SLA6140	S-MOS	
(Continued)																			

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells		Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State					
S-MOS Systems																			(Cont'd)
1530	3		CMOS	2	2				70	x					x	Silicon gate	SLA115X	S-MOS	5
1632	3		CMOS	2	2				70	x					x		SLA116L	S-MOS	
1746	2	60	CMOS	3	2	1	6		76	x	x	x		x	SLA6170		S-MOS		
2108	3		CMOS	2	2				82	x				x	SLA121X		S-MOS		
2232	3		CMOS	2	2				82	x				x	SLA122L	S-MOS	5		
2667	2	60	CMOS	3	2	1	6		94	x	x	x		x	SLA6270	S-MOS			
3276	3		CMOS	2	2				104	x				x	SLA132X	S-MOS			
			CMOS	2	2				128	x				x	SLA147X	S-MOS			
3312	2	60	CMOS	3	2	1	6		104	x	x	x		x	Silicon gate	SLA6330	S-MOS	10	
3432	3		CMOS	2	2				104	x				x	Silicon gate	SLA134L	S-MOS		
4342	2	60	CMOS	3	2	1	6		120	x	x	x		x		SLA6430	S-MOS		
4900	3		CMOS	2	2				128	x				x		SLA149L	S-MOS		
4935	0.65		SiCMOS	1	2				86							SLA904S	S-MOS	15	
5304	0.5		CMOS	1.2	2				78	x		x		x		SLA827S	S-MOS		
5980	3		CMOS	2	2				150	x				x		SLA159X	S-MOS		
5990	0.65		SiCMOS	1	2				102							SLA908S	S-MOS		
6204	2	60	CMOS	2	2	1	6		148	x	x	x		x	SLA6620	S-MOS	20		
6210	3		CMOS	2	2				150	x				x	SLA162L	S-MOS			
7580	0.65		SiCMOS	1	2				112						SLA909S	S-MOS			
7750	3		CMOS	2	2				170	x				x	SLA177X	S-MOS			
8000	3		CMOS	2	2				170	x				x	SLA180L	S-MOS	25		
9416	0.5		CMOS	1.2	2				104	x		x		x	SLA847S	S-MOS			
11978	0.65		SiCMOS	1	2				140						SLA912S	S-MOS			
14336	0.5		CMOS	1.2	2				132	x		x		x	SLA872S	S-MOS			
14823	0.65		SiCMOS	1	2				156							SLA915S	S-MOS	30	
18802	0.65		SiCMOS	1	2				172							SLA919S	S-MOS		
20216	0.3		SiCMOS	0.8	2				128	x		x		x		SLA1020	S-MOS		
21956	0.65		SiCMOS	1	2				186							SLA922S	S-MOS		
22680	0.5		CMOS	1.2	2				164	x		x		x	SLA883S	S-MOS	35		
24424	0.3		SiCMOS	0.8	2				140	x		x		x	SLA1024	S-MOS			
25669	0.65		SiCMOS	1	2				198						SLA926S	S-MOS			
29120	0.3		SiCMOS	0.8	2				152	x		x		x	SLA1029	S-MOS			
29162	0.65		SiCMOS	1	2				212						SLA929S	S-MOS	40		
30000	0.5		CMOS	1.2	2				190	x		x		x	SLA8F0S	S-MOS			
32645	0.65		SiCMOS	1	2				226						SLA933S	S-MOS			
34138	0.3		SiCMOS	0.8	2				164	x		x		x	SLA1034	S-MOS			
38550	0.5		CMOS	1.2	2				218	x		x		x	SLA8J3S	S-MOS	50		
39644	0.3		SiCMOS	0.8	2				176	x		x		x	SLA1039	S-MOS			
49489	0.3		SiCMOS	0.8	2				196	x		x		x	SLA1049	S-MOS			
60653	0.3		SiCMOS	0.8	2				216	x		x		x	SLA1060	S-MOS			
73353	0.3		SiCMOS	0.8	2				236	x		x		x	SLA1073	S-MOS	55		
81320	0.3		SiCMOS	0.8	2				248	x		x		x	SLA1081	S-MOS			
254743	0.3		SiCMOS	0.8	2				432	x		x		x	SLA1255	S-MOS			
Samsung Semiconductor																			
210	4.2	40	CMOS	3	1					x	x	x			Silicon Gate	KG10200	Samsung	45	
400	1	70	CMOS	2	2				28	x	x	x		x		KG30400	Samsung		
	4.2	40	CMOS	3	1					x	x	x			Silicon Gate	KG10400	Samsung	50	
600	1	70	CMOS	2	2				38	x	x	x		x		KG30600	Samsung		
	4.2	40	CMOS	3	1					x	x	x			KG10600	Samsung			
800	1	70	CMOS	2	2				42	x	x	x		x		KG30800	Samsung	55	
840	4.2	40	CMOS	3	1					x	x	x				KG10800	Samsung		
1190	4.2	40	CMOS	3	1					x	x	x				KG11200	Samsung		
1200	1	70	CMOS	2	2				50	x	x	x		x		KG31200	Samsung		
1600	4.2	40	CMOS	3	1					x	x	x				KG11600	Samsung	60	
1980	4.2	40	CMOS	3	1					x	x	x				KG12000	Samsung		
2000	1	70	CMOS	2	2				76	x	x	x		x		KG32000	Samsung		
3200	1	70	CMOS	2	2				88	x	x	x		x		KG33200	Samsung		
4000	1	70	CMOS	2	2				110	x	x	x		x	KG34000	Samsung	65		
6000	1	70	CMOS	2	2				132	x	x	x		x	KG36000	Samsung			
8000	1	70	CMOS	2	2				160	x	x	x		x	KG38000	Samsung			
Sanyo																			
708	1.2		CMOS	1.5	2	1			62	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92007B	♦ Sanyo	60	
1110	1.2		CMOS	1.5	2	1			82	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92011B	♦ Sanyo		
1881	1.2		CMOS	1.5	2	1			108	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92018B	♦ Sanyo		
2300	0.9		CMOS	1.2	2	1			62	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93023A	♦ Sanyo		
3216	1.2		CMOS	1.5	2	1			96	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92032A	♦ Sanyo		
(Continued)																			

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
Sanyo																			(Cont'd)
3300	0.9		CMOS	1.2	2	1			76	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93033A	◊ Sanyo	5	
4185	1.2		CMOS	1.5	2	1			108	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92041A	◊ Sanyo		
5000	0.9		CMOS	1.2	2	1			92	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93035A	◊ Sanyo		
6016	1.2		CMOS	1.5	2	1			130	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92060A	◊ Sanyo		
6500	0.9		CMOS	1.2	2	1			104	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93065A	◊ Sanyo		
8028	1.2		CMOS	1.5	2	1			152	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92080A	◊ Sanyo		
9000	0.9		CMOS	1.2	2	1			124	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93090A	◊ Sanyo		
10023	1.2		CMOS	1.5	2	1			176	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC92100A	◊ Sanyo		
12000	0.9		CMOS	1.2	2	1			148	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93120A	◊ Sanyo		
15000	0.9		CMOS	1.2	2	1			168	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93150A	◊ Sanyo	10	
20000	0.9		CMOS	1.2	2	1			214	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93200A	◊ Sanyo		
24000	0.9		CMOS	1.2	2	1			236	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93240A	◊ Sanyo		
26000	0.9		CMOS	1.2	2	1			244	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93260A	◊ Sanyo		
30000	0.9		CMOS	1.2	2	1			252	x	x	x		x	Power 3 V - 5.5 V Sea of Gate	LC93300A	◊ Sanyo		
SGS-THOMSON																			
306	1		HCMOS	1.5	2	1			28	x		x		x		ISB9003	◊† SGS-Thomson	15	
858	1		HCMOS	1.5	2	1			46	x		x		x		ISB9008	◊† SGS-Thomson		
1120	1.0	65	HCMOS	1.2	2				56	x	x	x		x		TSGC01000	SGS-Thomson	20	
	1.5	40	HCMOS	2	2				56	x	x	x		x		TSGB01000	SGS-Thomson		
		125	CMOS	2	2				56	x	x	x		x		GB1000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				56	x	x	x		x		MKGB1000D	† SGS-Thomson		
1152	2.5 *	40	CMOS	2	2				64	x	x	x		x		MKGA1000D	SGS-Thomson		
1554	1		HCMOS	1.5	2	1			62	x		x		x		ISB9015	◊† SGS-Thomson	25	
2016	2.5 *	40	CMOS	2	2				84	x	x	x		x		MKGA2000D	SGS-Thomson		
2128	1	65	HCMOS	1.2	2				76	x	x	x		x		TSGC02000	SGS-Thomson		
	1.5	40	HCMOS	2	2				76	x	x	x		x		TSGB02000	SGS-Thomson		
		125	CMOS	2	2				76	x	x	x		x		GB2000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				76	x	x	x		x		MKGB2000D	† SGS-Thomson	30	
2346	1		HCMOS	1.5	2	1			76	x		x		x		ISB9023	◊† SGS-Thomson		
2880	0.4	100	HCMOS	1.2	2	1			48	x		x		x		ISB12003	◊† SGS-Thomson		
3016	2.5 *	40	CMOS	2	2				104	x	x	x		x		MKGA3000D	SGS-Thomson		
3264	1	65	HCMOS	1.2	2				96	x	x	x		x		TSGC03000	SGS-Thomson		
	1.5	40	HCMOS	2	2				96	x	x	x		x		TSGB03000	SGS-Thomson	35	
		125	CMOS	2	2				96	x	x	x		x		GB3000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				96	x	x	x		x		MKGB3000D	† SGS-Thomson		
3795	1		HCMOS	1.5	2	1			96	x		x		x		ISB9038	◊† SGS-Thomson		
4080	2.5 *	40	CMOS	2	2				120	x	x	x		x		MKGA4000D	SGS-Thomson		
4256	1	65	HCMOS	1.2	2				108	x	x	x		x		TSGC04000	SGS-Thomson	40	
	1.5	40	HCMOS	2	2				108	x	x	x		x		TSGB04000	SGS-Thomson		
		125	CMOS	2	2				108	x	x	x		x		GB4000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				108	x	x	x		x		MKGB4000D	† SGS-Thomson		
5120	0.4	100	HCMOS	1.2	2	1			64	x		x		x		ISB12005	◊† SGS-Thomson		
5544	1		HCMOS	1.5	2	1			116	x		x		x		ISB9055	◊† SGS-Thomson	45	
5880	1	65	HCMOS	1.2	2				132	x	x	x		x		TSGC06000	SGS-Thomson		
	1.5	40	HCMOS	2	2				132	x	x	x		x		TSGB06000	SGS-Thomson		
		125	CMOS	2	2				132	x	x	x		x		GB6000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				132	x	x	x		x		MKGB6000D	† SGS-Thomson		
6277	1		HCMOS	1.5	2	1			130	x		x		x		ISB9069	◊† SGS-Thomson	50	
6480	0.25	100	HCMOS	0.8	2	1			72	x		x		x		ISB18006	◊ SGS-Thomson		
7872	1	65	HCMOS	1.2	2				168	x	x	x		x		TSGC08000	SGS-Thomson		
	1.5	40	HCMOS	2	2				168	x	x	x		x		TSGB08000	SGS-Thomson		
		125	CMOS	2	2				168	x	x	x		x		GB8000D	† SGS-Thomson		
	1.5 *	125	CMOS	2	2				168	x	x	x		x		MKGB8000D	† SGS-Thomson	55	
8000	0.3 *		HCMOS	1.2	2				76	x		x		x		ISB12008	SGS-Thomson		
8466			HCMOS	1.5	2	1			142	x		x		x		ISB9085	SGS-Thomson		
9680	0.25	100	HCMOS	0.8	2	1			88	x		x		x		ISB18010	◊ SGS-Thomson		
9776	1.0	65	HCMOS	1.2	2				192	x	x	x		x		TSGC10000	SGS-Thomson		
																			(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State				
SGS-THOMSON																		
9776	1.5	40	HCMOS	2	2				192	x	x	x		x			(Cont'd)	
		125	CMOS	2	2				192	x	x	x		x		TSGB10000	SGS-Thomson	
	1.5 *	125	CMOS	2	2				192	x	x	x		x		GB10000D	† SGS-Thomson	
																MKGB10000D	† SGS-Thomson	
11520	0.3 *		HCMOS	1.2	2				92	x		x		x		ISB12011	SGS-Thomson	
11970	1		HCMOS	1.5	2	1			168	x		x		x		ISB9122	† SGS-Thomson	
13502	0.25	100	HCMOS	0.8	2	1			104	x		x		x		ISB18013	◊ SGS-Thomson	
15680	0.3 *		HCMOS	1.2	2				108	x		x		x		ISB12015	SGS-Thomson	
17772	1		HCMOS	1.5	2	1			196	x		x		x		ISB9165	† SGS-Thomson	
18000	0.25	100	HCMOS	0.8	2	1			120	x		x		x		ISB18018	◊ SGS-Thomson	
19635	1		HCMOS	1.5	2	1			214	x		x		x		ISB9201	† SGS-Thomson	
20480	0.3 *		HCMOS	1.2	2				120	x		x		x		ISB12020	SGS-Thomson	
25920	0.25	100	HCMOS	0.8	2	1			144	x		x		x		ISB18026	◊ SGS-Thomson	
	0.3 *		HCMOS	1.2	2				136	x		x		x		ISB12025	SGS-Thomson	
32000	0.25	100	HCMOS	0.8	2	1			160	x		x		x		ISB18032	◊ SGS-Thomson	
	04	100	HCMOS	1.2	2	1			152	x		x		x		ISB12032	† SGS-Thomson	
38720	0.3 *		HCMOS	1.2	2				164	x		x		x		ISB12038	SGS-Thomson	
42320	0.25	100	HCMOS	0.8	2	1			184	x		x		x		ISB1804	◊ SGS-Thomson	
54080	0.25	100	HCMOS	0.8	2	1			208	x		x		x		ISB18054	◊ SGS-Thomson	
	0.3 *		HCMOS	1.2	2				200	x		x		x		ISB12054	SGS-Thomson	
62720	0.4	100	HCMOS	1.2	2	1			224	x		x		x		ISB12062	† SGS-Thomson	
76880	0.3 *		HCMOS	1.2	2				232	x		x		x		ISB12076	SGS-Thomson	
103680	0.3 *		HCMOS	1.2	2				256	x		x		x		ISB12103	SGS-Thomson	
128000	0.3 *		HCMOS	1.2	2				256	x		x		x		ISB12128	SGS-Thomson	
Sharp Electronics																		
300	1.7	90	CMOS	1.6	2	1			37	x	x			x		LZ93300	Sharp (3626)	
600	1.7	90	CMOS	1.6	2	1			51	x	x			x		LZ93600	Sharp (3626)	
1010	1.7	90	CMOS	1.6	2	1			67	x	x			x		LZ931000	Sharp (3626)	
1596	1.7	90	CMOS	1.6	2	1			97	x	x			x		LZ931600	Sharp (3626)	
2000	1.2	100	CMOS	1.2	2	1			97	x	x			x		LZ952000	Sharp (3626)	
2240	1.7	90	CMOS	1.6	2	1			97	x	x			x		LZ932200	Sharp (3626)	
3145	1.7	90	CMOS	1.6	2	1			112	x	x			x		LZ933000	Sharp (3626)	
4009	1.7	90	CMOS	1.6	2	1			128	x	x			x		LZ934000	Sharp (3626)	
4255	1.2	100	CMOS	1.2	2	1			128	x	x			x		LZ954000	Sharp (3626)	
5000	1.7	90	CMOS	1.6	2	1			140	x	x			x		LZ935000	Sharp (3626)	
6075	1.2	100	CMOS	1.2	2	1			148	x	x			x		LZ956000	Sharp (3626)	
8370	1.2	100	CMOS	1.2	2	1			176	x	x			x		LZ958000	Sharp (3626)	
10032	1.2	100	CMOS	1.2	2	1			194	x	x			x		LZ9510000	Sharp (3626)	
Siemens																		
1500	0.12 *	1500	Bipolar	1.5	3	2			80			x		x		SH100E4	† Siemens	
2300	0.4	180	CMOS	1	2	1			44	x		x		x		SC2D4	† Siemens	
2500	0.12 *	1500	Bipolar	1.5	3	2			120			x		x		SH100E5	† Siemens	
3498	0.7	150	CMOS	1.5	2	1			60	x	x	x		x		SC3C1	† Siemens	
4400	0.4	180	CMOS	1	2	1			60	x	x	x		x		SC4D4	† Siemens	
5000	0.12 *	1500	Bipolar	1.5	3	2			160			x		x		SH100E6	† Siemens	
5120	0.7	150	CMOS	1.5	2	1			72	x	x	x		x		SC5C1	† Siemens	
5800	0.4	180	CMOS	1	2	1			68	x	x	x		x		SC6D4	† Siemens	
8000	0.7	150	CMOS	1.5	2	1			92	x	x	x		x		SC8C1	† Siemens	
8900	0.4	180	CMOS	1	2	1			84	x	x	x		x		SC9D4	† Siemens	
10000	0.12 *	1500	Bipolar	1.5	3	2			256			x		x		SH100E7	† Siemens	
11092	0.7	150	CMOS	1.5	2	1			106	x	x	x		x		SC11C1	† Siemens	
12000	0.4	180	CMOS	1	2	1			100	x	x	x		x		SC12D4	† Siemens	
14204	0.7	150	CMOS	1.5	2	1			120	x		x		x		SC14C1	† Siemens	
17082	0.7	150	CMOS	1.5	2	1			132	x	x	x		x		SC17C1	† Siemens	
18000	0.4	180	CMOS	1	2	1			120	x	x	x		x		SC18D4	† Siemens	
21060	0.7	150	CMOS	1.5	2	1			146	x		x		x		SC21C1	† Siemens	
25740	0.7	150	CMOS	1.5	2	1			160	x	x	x		x		SC26C1	† Siemens	
27000	0.4	180	CMOS	1	2	1			144	x	x	x		x		SC27D4	† Siemens	
32000	0.7	150	CMOS	1.5	2	1			180	x		x		x		SC32C1	† Siemens	
37000	0.4	180	CMOS	1	2	1			168	x	x	x		x		SC37D4	† Siemens	
37932	0.7	150	CMOS	1.5	2	1			196	x	x	x		x		SC38C1	† Siemens	
44000	0.4	180	CMOS	1	2	1			184	x	x	x		x		SC44D4	† Siemens	
50904	0.7	150	CMOS	1.5	2	1			256	x	x	x		x		SC51C1	† Siemens	
54000	0.4	180	CMOS	1	2	1			204	x	x	x		x		SC54D4	† Siemens	
68000	0.4	180	CMOS	1	2	1			228	x	x	x		x		SC68D4	† Siemens	
74970	0.7	150	CMOS	1.5	2	1			256	x	x	x		x		SC75C1	† Siemens	
89000	0.4	180	CMOS	1	2	1			256	x	x	x		x		SC89D4	† Siemens	
100182	0.7	150	CMOS	1.5	2	1			256	x	x	x		x		SC100C1	† Siemens	
128000	0.4	180	CMOS	1	2	1			256	x	x	x		x		SC128D4	† Siemens	
129042	0.7	150	CMOS	1.5	2	1			256	x	x	x		x		SC129C1	† Siemens	
172000	0.4	180	CMOS	1	2	1			256	x	x	x		x		SC172D4	† Siemens	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
Sony Corporation of America																			
75	0.2	3000	ECL	1.2	2				32					x		ECL 100K Compatible I/O	E3G70	♦ Sony	
210	0.3	2500	ECL	1.2	2				37					x		ECL 100K Compatible I/O	E3G200	♦ Sony	
1160	0.35	2000	ECL	1.2	2			40				x		x	x	ECL Look/10KH Compatible I/O	E3G1K	♦ Sony	
2178	0.35	2000	ECL	1.2	2			52				x		x	x	ECL 100K/10KH Compatible I/O	E3G2K	♦ Sony	
3960	0.35	2000	ECL	1.2	2			72	72			x		x	x	ECL 100K/10KH Compatible I/O	E3G4K	♦ Sony	5
Texas Instruments																			
13K	0.344	400	BiCMOS	0.8	3	3			80	x	x	x			x		TGB1013	♦ TI	
20K	0.344	400	BiCMOS	0.8	3	3			100	x	x	x			x		TGB1020	♦ TI	
33K	0.344	400	BiCMOS	0.8	3	3			116	x	x	x			x		TGB1033	♦ TI	
51K	0.344	400	BiCMOS	0.8	3	3			156	x	x	x			x		TGB1051	♦ TI	
66K	0.344	400	BiCMOS	0.8	3	3			188	x	x	x			x		TGB1066	♦ TI	10
106K	0.344	400	BiCMOS	0.8	3	3			256	x	x	x			x		TGB1106	♦ TI	
150K	0.344	400	BiCMOS	0.8	3	3			320	x	x	x			x		TGB1150	♦ TI	
1200	9.3	70	CMOS	1	2			57	x	x	x			x		Field Programmable Gate Array	TPC1010A	♦ TI	
1505	0.5	208	CMOS	1	2	1		44	x	x	x			x			TGC102	♦ TI	
2000	9.3	70	CMOS	1	2			69	x	x	x			x		Field Programmable Gate Array	TPC1020A	♦ TI	15
2722	0.5	208	CMOS	1	2	1		68	x	x	x			x			TGC103A	♦ TI	
3600	0.5	150	CMOS	1	2	1		100	x	x	x			x		CMOS Gate Array	TGC104	♦ TI	
4500	0.5	150	CMOS	1	2	1		100	x	x	x			x		CMOS Gate Array	TGC105A	TI	
5600	0.5	150	CMOS	1	2	1		130	x	x	x			x		CMOS Gate Array	TGC106	♦ TI	
6000	9.3	70	CMOS	1	2			140	x	x	x			x		Field Programmable Gate Array	TPC1280	♦ TI	20
6720	0.5	150	CMOS	1	2	1		130	x	x	x			x		CMOS Gate Array	TGC107	♦ TI	
8340	0.5	150	CMOS	1	2	1		158	x	x	x			x		CMOS Gate Array	TGC108A	TI	
10008	0.5	150	CMOS	1	2	1		158	x	x	x			x		CMOS Gate Array	TGC110	♦ TI	
12654	0.5	150	CMOS	1	2	1		196	x	x	x			x		CMOS Gate Array	TGC113	♦ TI	
14706	0.5	150	CMOS	1	2	1		196	x	x	x			x		CMOS Gate Array	TGC115A	♦ TI	25
15580	0.5	150	CMOS	1	2	1		216	x	x	x			x		CMOS Gate Array	TGC116	♦ TI	
18620	0.5	150	CMOS	1	2	1		216	x	x	x			x		CMOS Gate Array	TGC119	♦ TI	
21854	0.5	150	CMOS	1	2	1		256	x	x	x			x		CMOS Gate Array	TGC122	♦ TI	
25868	0.5	150	CMOS	1	2	1		256	x	x	x			x		CMOS Gate Array	TGC126	♦ TI	
Toshiba America Electronic Components																			
700	0.6	150 *	CMOS	1.5	2	1		44 *	x	x	x			x			TC11L	Toshiba	30
2300	0.4	200	CMOS, Si-Gate	1	2			44	x		x			x			TC140G02	Toshiba	
			CMOS, Si-Gate	1	2			44	x		x			x			TC150G02	Toshiba	
4400	0.4	200	CMOS, Si-Gate	1	2			60	x		x			x			TC140G04	Toshiba	
			CMOS, Si-Gate	1	2			60	x		x			x			TC150G04	Toshiba	
5000	0.4 *	200 *	CMOS	1	2	1		160 *	x	x	x			x			TC14L	Toshiba	35
5800	0.4	200	CMOS, Si-Gate	1	2			68	x		x			x			TC140G06	Toshiba	
			CMOS, Si-Gate	1	2			64	x		x			x			TC150G06	Toshiba	
8900	0.4	200	CMOS, Si-Gate	1	2			84	x		x			x			TC140G09	Toshiba	
			CMOS, Si-Gate	1	2			84	x		x			x			TC150G09	Toshiba	
12000	0.4	200	CMOS, Si-Gate	1	2			100	x		x			x			TC140G12	Toshiba	40
			CMOS, Si-Gate	1	2			100	x		x			x			TC150G12	Toshiba	
18000	0.4	200	CMOS, Si-Gate	1	2			120	x		x			x			TC140G18	Toshiba	
			CMOS, Si-Gate	1	2			120	x		x			x			TC150G18	Toshiba	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells		Input/Output Compatibility						Comments	Device	Source	Line										
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State														
(Cont'd)																												
Toshiba America Electronic Components	27000	0.4	200	CMOS, Si-Gate	2			144	x		x		x			TC140G27	Toshiba											
				CMOS, Si-Gate															TC150G27	Toshiba								
37000	0.4	200	CMOS, Si-Gate	2			168	x		x		x				TC140G37	Toshiba											
			CMOS, Si-Gate																TC150G37	Toshiba								
44000	0.4	200	CMOS, Si-Gate	2			184	x		x		x				TC140G44	Toshiba	5										
			CMOS, Si-Gate																TC150G44	Toshiba								
54000	0.4	200	CMOS, Si-Gate	2			204	x		x		x				TC140G54	Toshiba											
			CMOS, Si-Gate																TC150G54	Toshiba								
68000	0.4 *	200 *	CMOS	1	2	1		360	x	x	x		x			TC140G	Toshiba	10										
			CMOS, Si-Gate	1	2	228													x		x	x	TC140G68	Toshiba				
			CMOS, Si-Gate	1	2	228													x		x	x	TC150G68	Toshiba				
89000	0.4	200	CMOS, Si-Gate	2			260	x		x		x				TC140G89	Toshiba											
			CMOS, Si-Gate																1	2	260	x		x	x	TC150G89	Toshiba	
100000	0.4 *	200 *	CMOS	1	3	1		360	x	x	x		x			TC150G	Toshiba	15										
128000	0.4	200	CMOS, Si-Gate	2		312													x		x		x		TC140GC8	Toshiba		
			CMOS, Si-Gate																								1	2
172000	0.4	200	CMOS, Si-Gate	2			360	x		x		x				TC140GH2	Toshiba											
			CMOS, Si-Gate																1	2	360	x		x	x	TC150GH2	Toshiba	
United Technologies	20K	0.53	50	CMOS	1.2	2	1		176	x	x	x		x		Channelless Array, Rad-Hard Library, 1000K Rods (Si)	UT20ER	◊ UTMC	20									
50K	0.53	50	CMOS	1.2	2	1	256													x	x	x		x	Channelless Array, Rad-Hard Library, 1000 Rods (Si)	UT50ER	◊ UTMC	
3400	1		CMOS	1.5	2	96	x													x	x		x		UT116D	UTMC		
			CMOS	1.5	2	96	x													x	x	x	UT116DR	◊ UTMC				
6000	1		CMOS	1.5	2	136	x													x	x		x		UT160D	UTMC		
			CMOS	1.5	2	136	x													x	x	x	UT160DR	◊ UTMC				
7800	1		CMOS	1.5	2	156	x													x	x		x		UT180D	UTMC		
			CMOS	1.5	2	156	x													x	x	x	Radiation Hardened	UT180DR	◊ UTMC			
11000	1		CMOS	1.5	2	188	x													x	x		x		UT212D	UTMC		
			CMOS	1.5	2	188	x													x	x	x	UT212DR	◊ UTMC				
Universal Semiconductor	99	0.9	50	CMOS	2	1	1		18	x	x	x		x	24 pads	IS02J	Universal	30										
2.5	30	CMOS	3	1	1	18	x												x	x	x	24 pads	IS03J	Universal				
180	0.9	50	CMOS	2	1	1	30												x	x	x		x	40 pads	IS02I	Universal		
			CMOS	3	1	1	30												x	x	x	x	40 pads	IS03I	Universal			
360	0.9	50	CMOS	2	1	1	36												x	x	x		x	46 pads	IS02A	Universal		
			CMOS	3	1	1	36												x	x	x	x	46 pads	IS03A	↑ Universal			
			CMOS	5	1	1	36												x	x	x	x	46 pads	IS05A	↑ Universal			
540	0.9	50	CMOS	2	1	1	48												x	x	x		x	58 pads	IS02B	Universal		
			CMOS	3	1	1	48												x	x	x	x	58 pads	IS03B	↑ Universal			
			CMOS	5	1	1	48												x	x	x	x	58 pads	IS05B	↑ Universal			
720	0.9	50	CMOS	2	1	1	54												x	x	x		x	64 pads	IS02C	Universal		
			CMOS	3	1	1	54												x	x	x	x	64 pads	IS03C	↑ Universal			
			CMOS	5	1	1	54												x	x	x	x	64 pads	IS05C	↑ Universal			
(Continued)																												

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (μm)	Metal	Poly	Input/Output Cells		Input/Output Compatibility							Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State					
Universal Semiconductor																		(Cont'd)	
960	0.9	50	CMOS	2	1	1			62	x	x	x		x	72 pads	IS02D	Universal	5	
	2.4	30	CMOS	3	1	1			62	x	x	x		x	72 pads	IS03D	↑ Universal		
	4.4	20	CMOS	5	1	1			62	x	x	x		x	72 pads	IS05D	↑ Universal		
1200	0.9	50	CMOS	2	1	1			68	x	x	x		x	78 pads	IS02E	Universal	10	
	2.4	30	CMOS	3	1	1			68	x	x	x		x	78 pads	IS03E	↑ Universal		
	4.4	20	CMOS	5	1	1			68	x	x	x		x	78 pads	IS05E	↑ Universal		
1500	0.9	50	CMOS	2	1	1			76	x	x	x		x	86 pads	IS02F	Universal	15	
	2.4	30	CMOS	3	1	1			70	x	x	x		x	86 pads	IS03F	↑ Universal		
	4.4	20	CMOS	5	1	1			70	x	x	x		x	78 pads	IS05F	↑ Universal		
1800	0.9	50	CMOS	2	1	1			82	x	x	x		x	92 pads	IS02G	Universal	20	
	2.4	30	CMOS	3	1	1			82	x	x	x		x	92 pads	IS03G	↑ Universal		
	4.4	20	CMOS	5	1	1			82	x	x	x		x	92 pads	IS05G	↑ Universal		
2400	0.9	50	CMOS	2	1	1			90	x	x	x		x	100 pads	IS02H	Universal	25	
	2.4	30	CMOS	3	1	1			82	x	x	x		x	100 pads	IS03H	↑ Universal		
	4.4	20	CMOS	5	1	1			82	x	x	x		x	100 pads	IS05H	↑ Universal		
Vertex Semiconductor																			
8900	0.4 *	312	CMOS	1	2				84	x	x	x		x	3600 Usable Gates	V25009	Vertex	30	
18000	0.4 *	312	CMOS	1	2				120	x	x	x		x	7500 Usable Gates	V25018	‡ Vertex		
27000	0.4 *	312	CMOS	1	2				144	x	x	x		x	11000 Usable Gates	V25027	‡ Vertex		
37000	0.4 *	312	CMOS	1	2				168	x	x	x		x	15000 Usable Gates	V25037	‡ Vertex	35	
44000	0.4 *	312	CMOS	1	2				184	x	x	x		x	17000 Usable Gates	V25044	‡ Vertex		
54000	0.4 *	312	CMOS	1	2				204	x	x	x		x	21000 Usable Gates	V25054	‡ Vertex		
54700	0.45		CMOS	0.8	2				196	x					Channelless Architecture	ICS25055	Vertex	40	
68000	0.4 *	312	CMOS	1	2				228	x	x	x		x	27000 Usable Gates	V25068	‡ Vertex		
68200	0.45		CMOS	0.8	2				220	x					Channelless Architecture	ICS25068	Vertex		
89000	0.4 *	312	CMOS	1	2				260	x	x	x		x	35000 Usable Gates	V25089	‡ Vertex	45	
			CMOS	1	3				260	x	x	x		x	62000 Usable Gates	V25089-3LM	‡ Vertex		
89200	0.45		CMOS	0.8	2				252	x					Channelless Architecture	ICS25089	Vertex		
128000	0.4 *	312	CMOS	1	2				312	x	x	x		x	51000 Usable Gates	V25128	‡ Vertex	50	
			CMOS	1	3				312	x	x	x		x	90000 Usable Gates	V25128-3LM	‡ Vertex		
128800	0.45		CMOS	0.8	2				304	x					Channelless Architecture	ICS25129	Vertex		
172000	0.4 *	312	CMOS	1	2				360	x	x	x		x	68000 Usable Gates	V25172	‡ Vertex	55	
			CMOS	1	3				360	x	x	x		x	120000 Usable Gates	V25172-3LM	‡ Vertex		
	0.45		CMOS	0.8	2				352	x					Channelless Architecture	ICS25172	Vertex		
Vitesse Semiconductor																			
100K	0.05	1000	GaAs E/D MESFET	0.6	4	1			196		x	x	x	x	Channel-Free, Programmable ECL/TTL/or GaAs I/O	FX100K	‡ Vitesse	60	
200K	0.05	1000	GaAs E/D MESFET	0.6	4	1			256		x	x	x	x	Channel-Free, Programmable ECL/TTL/or GaAs I/O	FX200K	‡ Vitesse		
350K	0.05	1000	GaAs E/D MESFET	0.6	4	1			360		x	x	x		Channel-Free, Programmable ECL/TTL/or GaAs I/O	X350K	‡ Vitesse		
1500	0.12	3000	GaAs E/D MESFET	0.8	2		24	22					x		Two Logic Cell Types	VSC1520	‡ Vitesse	65	
	0.15	2300	GaAs E/D MESFET	0.8	2		25	22					x		Two Logic Cell Types	VSC1500	‡ Vitesse		
1800	0.12 *	1000	GaAs E/D MESFET	0.8	2	1	13		28		x	x	x	x	Very Low Power	VSC2000	‡ Vitesse		
2400	0.07	1000	GaAs E/D MESFET	0.8	3	1	40		52	x	x	x		x	PLD Replacement	PLRZKT	‡ Vitesse	70	
3584	0.07 *	1000	GaAs E/D MESFET	0.8	3	1	44		52		x	x	x	x	GaAs I/O Available	VSC3K	‡ Vitesse		
4000	0.16	1000	GaAs E/D MESFET	0.8	2		52		68		x	x	x	x	Very Low Power	VSC4500	‡ Vitesse		
6400	0.07 *	1000	GaAs E/D MESFET	0.8	3	1	52		68		x	x	x	x	GaAs I/O Available	VSC5K	‡ Vitesse	75	
13376	0.07 *	1200	GaAs E/D MESFET	0.8	3	1	100		90		x	x	x	x	GaAs I/O Available	VSC10K	‡ Vitesse		
16896	0.07 *	1000	GaAs E/D MESFET	0.8	3	1	96		100		x	x	x	x	GaAs I/O Available	VSC15K	‡ Vitesse		
																		(Continued)	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

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Mfr/ Equip. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility				Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL					
Vitesse Semiconductor																		(Cont'd)
20736	0.07	1000	GaAs E/D MESFET	0.8	3	1	104	19	132			x	x	x	x	8K Static RAM, Programmable ECL/TTL/or GaAs I/O	VSCZOK8R	⊕ Vitesse
30528	0.07 *	1000	GaAs E/D MESFET	0.8	3	1	100		156			x	x	x	x	GaAs I/O Available	VSC30K	⊕ Vitesse
VLSI Technology																		
0.26	71.3	250	CMOS	1	2/3	1			284	x	x	x		x	Channel-Free Array	VGT350/353	⊕ VLSI Tech (3472)	5
2.9K	0.26	250	CMOS	1	2/3	1			80	x	x	x		x	Channel-Free Array	VGT450/453	⊕ VLSI Tech (3472)	
			CMOS	1	2/3	1			80	x	x	x		x	Channel-Free Array	VGT350010	⊕ VLSI Tech	
4.3K	0.18	330	CMOS	0.8	2/3	1			80	x	x	x		x	Channel-Free Array	VGT350022	⊕ VLSI Tech	10
			CMOS	0.8	2/3	1			80	x	x	x		x	Channel-Free Array	VGC450080	⊕ VLSI Tech	
																VGT450080	⊕ VLSI Tech	
5.2K	0.26	250	CMOS	1	2/3	1			80	x	x	x		x	Channel-Free Array	VGT353010	⊕ VLSI Tech	15
5.5K	0.18	330	CMOS	0.8	2/3	1			92	x	x	x		x	Channel-Free Array	VGC450092	⊕ VLSI Tech	
			CMOS	0.8	2/3	1			92	x	x	x		x	Channel-Free Array	VGT450092	⊕ VLSI Tech	
7.5K	0.18	330	CMOS	0.8	2/3	1			80	x	x	x		x	Channel-Free Array	VGT453080	⊕ VLSI Tech	20
7.9K	0.18	.4330	CMOS	0.8	2/3	1			100	x	x	x		x	Channel-Free Array	VGT450100	⊕ VLSI Tech	
9.1K	0.26	250	CMOS	1	2/3	1			140	x	x	x		x	Channel-Free Array	VGT350030	⊕ VLSI Tech	
9.7K	0.18	330	CMOS	0.8	2/3	1			92	x	x	x		x	Channel-Free Array	VGT453092	⊕ VLSI Tech	25
																	⊕ VLSI Tech	
11.4K	0.18	330	CMOS	0.8	2/3	1			80	x	x	x		x	Channel-Free Array	VGT450122	⊕ VLSI Tech	
11.9K	0.26	250	CMOS	1	2/3	1			160	x	x	x		x	Channel-Free Array	VGT350039	⊕ VLSI Tech	30
			CMOS	1	2/3	1			80	x	x	x			Channel-Free Array	VGT353022	⊕ VLSI Tech	
13.8K	0.18	330	CMOS	0.8	2/3	1			100	x	x	x		x	Channel-Free Array	VGT453100	⊕ VLSI Tech	
13.9K	0.26	250	CMOS	1	2/3	1			172	x	x	x		x	Channel-Free Array	VGT350046	⊕ VLSI Tech	35
16.3K	0.26	250	CMOS	1	2/3	1			80	x	x	x		x	Channel-Free Array	VGT353030	⊕ VLSI Tech	
16K	0.18	330	CMOS	0.8	2/3	1			146	x	x	x		x	Channel-Free Array	VGT450146	⊕ VLSI Tech	
19.5K	0.18	330	CMOS	0.8	2/3	1			162	x	x	x		x	Channel-Free Array	VGT450162	⊕ VLSI Tech	40
19.9K	0.18	330	CMOS	0.8	2/3	1			122	x	x	x		x	Channel-Free Array	VGT453122	⊕ VLSI Tech	
20.7	0.26	250	CMOS	1	2/3	1			208	x	x	x		x	Channel-Free Array	VGT350068	⊕ VLSI Tech	
20.7K	0.26	250	CMOS	1	2/3	1			208	x	x	x		x	Channel-Free Array	VGT350068	⊕ VLSI Tech	45
21.4K	0.26	250	CMOS	1	2/3	1			160	x	x	x		x	Channel-Free Array	VGT353039	⊕ VLSI Tech	
23.3	0.26	250	CMOS	1	2/3	1			220	x</								

♦ Available in Surface Mount Package

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IC MASTER

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv.	max Gate Delay Gates	Toggle Freq (ns)	Device Process Tech.	Geometry (µm)	Metal	Poly	Input/Output Cells			Input/Output Compatibility					Three State	Comments	Device	Source	Line
							Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL						
VLSI Technology																			(Cont'd)
59.4K	0.26	250	CMOS	1	2/3	1			260	x	x	x		x	Channel-Free Array	VG7353110	o† VLSI Tech	5	
59.8K	0.26	250	CMOS	1	2/3	1			348	x	x	x		x	Channel-Free Array	VG7350198	o† VLSI Tech		
64.6K	0.18	330	CMOS	0.8	2/3	1			226	x	x	x		x	Channel-Free Array	VG7453226	o† VLSI Tech		
69.2K	0.18	330	CMOS	0.8	2/3	1			310	x	x	x		x	Channel-Free Array	VG7450310	o† VLSI Tech		
74.2K	0.26	250	CMOS	1	2/3	1			388	x	x	x		x	Channel-Free Array	VG7350246	o† VLSI Tech	10	
75.6K	0.18	330	CMOS	0.8	2/3	1			244	x	x	x		x	Channel-Free Array	VG7453244	o† VLSI Tech		
81.5K	0.26	250	CMOS	1	2/3	1			304	x	x	x		x	Channel-Free Array	VG7353151	o† VLSI Tech		
81.8	0.18	330	CMOS	0.8	2/3	1			338	x	x	x		x	Channel-Free Array	VG7450338	o† VLSI Tech		
88.3K	0.26	250	CMOS	1	2/3	1			316	x	x	x		x	Channel-Free Array	VG7353163	o† VLSI Tech	15	
97.5K	0.18	330	CMOS	0.8	2/3	1			278	x	x	x		x	Channel-Free Array	VG7453278	o† VLSI Tech		
98.4K	0.18	330	CMOS	0.8	2/3	1			370	x	x	x		x	Channel-Free Array	VG7450370	o† VLSI Tech		
107.1K	0.26	250	CMOS	1	2/3	1			348	x	x	x		x	Channel-Free Array	VG7353198	o† VLSI Tech		
113.3	0.18	330	CMOS	0.8	2/3	1			398	x	x	x		x	Channel-Free Array	VG7450398	o† VLSI Tech	20	
121.1K	0.18	330	CMOS	0.8	2/3	1			310	x	x	x		x	Channel-Free Array	VG7453310	o† VLSI Tech		
132.7K	0.18	330	CMOS	0.8	2/3	1			430	x	x	x		x	Channel-Free Array	VG7450430	o† VLSI Tech		
132.8	0.26	250	CMOS	1	2/3	1			388	x	x	x		x	Channel-Free Array	VG7353246	o VLSI Tech		
143.2K	0.18	330	CMOS	0.8	2/3	1			338	x	x	x		x	Channel-Free Array	VG7453338	o† VLSI Tech	25	
172.3K	0.18	330	CMOS	0.8	2/3	1			370	x	x	x		x	Channel-Free Array	VG7453370	o† VLSI Tech		
198.3	0.18	330	CMOS	0.8	2/3	1			398	x	x	x		x	Channel-Free Array	VG7453398	o† VLSI Tech		
232.2	0.18	330	CMOS	0.8	2/3	1			430	x	x	x		x	Channel-Free Array	VG7453430	o† VLSI Tech		
960	0.56 *	200	CMOS	1.5	2				48	x	x	x		x		VG7200003	o† VLSI Tech	30	
2018	0.56 *	200	CMOS	1.5	2				68	x	x	x		x		VG7200006	o† VLSI Tech		
3258	0.56 *	200	CMOS	1.5	2				88	x	x	x		x		VG7200010	o† VLSI Tech		
5302	0.56 *	200	CMOS	1.5	2				112	x	x	x		x		VG7200017	o† VLSI Tech		
7260	0.56 *	200	CMOS	1.5	2				128	x	x	x		x		VG7200024	o† VLSI Tech	35	
8640	0.56 *	200	CMOS	1.5	2				140	x	x	x		x		VG7200029	o† VLSI Tech		
10140	0.56 *	200	CMOS	1.5	2				152	x	x	x		x		VG7200033	o† VLSI Tech		
12790	0.56 *	200	CMOS	1.5	2				172	x	x	x		x		VG7200042	o† VLSI Tech		
16934	0.56 *	200	CMOS	1.5	2				196	x	x	x		x		VG7200056	o† VLSI Tech	40	
22118	0.56 *	200	CMOS	1.5	2				224	x	x	x		x		VG7200073	o† VLSI Tech		
30300	0.35 *	250	CMOS	1	2	1			140	x	x	x		x	Channel-Free Array	VG7300030	VLSI Tech		
32854	0.56 *	200	CMOS	1.5	2				272	x	x	x		x		VG7200109	o† VLSI Tech		
43740	0.56 *	200	CMOS	1.5	2				312	x	x	x		x		VG7200145	o† VLSI Tech	45	
46200	0.35 *	250	CMOS	1	2	1			172	x	x	x		x	Channel-Free Array	VG7300046	VLSI Tech		
54000	0.56 *	200	CMOS	1.5	2				348	x	x	x		x		VG7200180	o† VLSI Tech		
77400	0.35 *	250	CMOS	1	2	1			220	x	x	x		x	Channel-Free Array	VG7300077	VLSI Tech		
110300	0.35 *	250	CMOS	1	2	1			260	x	x	x		x	Channel-Free Array	VG7300110	VLSI Tech	50	
163800	0.35 *	250	CMOS	1	2	1			316	x	x	x		x	Channel-Free Array	VG7300163	VLSI Tech		
198800	0.35 *	250	Si-Gate CMOS	1	2				348	x				x		VG7300198	VLSI Tech		
246500	0.35 *	250	CMOS	1	2	1			388	x	x	x		x	Channel-Free Array	VG7300246	VLSI Tech		
Xilinx																			(Continued)
1200	3	70	CMOS	1.2	2	1			58	x		x		x	User Programmable	XC2064	o† Xilinx	55	
1800		70	CMOS	1.5	2	1			74	x		x		x	HardWire Logic Cell Array	XC2318	Xilinx		
	3	70	CMOS	1.2	2	1			74	x		x		x	User Programmable	XC2018	o† Xilinx		
2000	0.6		CMOS	0.8	2				64	x		x		x	Logic Cell Array	XC4002	Xilinx	60	
	3	70	CMOS	1.2	2	1			64	x		x		x	User Programmable	XC3020	o† Xilinx		
3000		100	CMOS	1.2	2	1			80	x		x		x	HardWire Logic Cell Array	XC3330	o Xilinx	65	
	0.6		CMOS	0.8	2				80	x		x		x	Logic Cell Array	XC4003	Xilinx		
	3	70	CMOS	1.2	2	1			80	x		x		x	User Programmable	XC3030	o† Xilinx		
4000	0.6		CMOS	0.8	2				96	x		x		x	Logic Cell Array	XC4004	Xilinx	70	
4200		100	CMOS	1.2	2	1			82	x		x		x	HardWire Logic Cell Array	XC3342	o Xilinx		
	3	70	CMOS	1.2	2	1			96	x		x		x	User Programmable	XC3042	o† Xilinx		
5000	0.6		CMOS	0.8	2				112	x		x		x	Logic Cell Array	XC4005	Xilinx	75	
6000	0.6		CMOS	0.8	2				128	x		x		x	Logic Cell Array	XC4006	Xilinx		
6400	3	70	CMOS	1.2	2	1			120	x		x		x	User Programmable	XC3064	o† Xilinx	80	
8000	0.6		CMOS	0.8	2				144	x		x		x	Logic Cell Array	XC4008	Xilinx		

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Gate Arrays (Cont'd)

Mfr/ Equiv. 2-Input Gates	max Gate Delay (ns)	Toggle Freq (MHz)	Device Process Tech.	Geometry			Input/Output Cells			Input/Output Compatibility							Comments	Device	Source	Line
				(μm)	Metal	Poly	Input Only	Out- put Only	Un- com- mitted	C- MOS	TTL- LS	TTL	ECL	Three State						
Xilinx																			(Cont'd)	
9000		100	CMOS	1.2	2	1			144	x		x		x	HardWire Logic Cell Array	XC3390	◊ Xilinx			
	3	70	CMOS	1.2	2	1			144	x		x		x	User Programmable	XC3090	◊ † Xilinx	(3790)		
10000	0.8		CMOS	0.6	2				160	x		x		x	Logic Cell Array	XC4010	Xilinx	(3785, 3790)		
13000	0.6		CMOS	0.8	2				192	x		x		x	Logic Cell Array	XC4013	◊ Xilinx	(3785)		

ASICs/CUSTOM

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◦ Available in Surface Mount Package

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ASIC/CUSTOM—Linear & Linear/Digital Arrays

Manufacturer	Total Bonding Pads	Linear Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Digital Equiv. 2-Input Gates	Gate Delay ns @ V	Uncommitted Transistors NPN	PNP	Number Capacitors	Supply Voltage, V	Comments	Device	Source	Line
AT&T													
CBIC			80	30	2	10	12	3	12		ALA210	AT&T	5
	30		109			13	15	3	90		ALA300	AT&T	
	32		436			52	60	12	90		ALA301	AT&T	
	36		480			68	43	21	12		ALA201	AT&T	
	38		434			61	61	7	33		ALA401	AT&T	
	46		744			104	104	12	33		ALA400	AT&T	
	48		960			136	86	38	12		ALA202	AT&T	
BCDMOS	36		207						350		ALA501	AT&T	
Cherry Semiconductor													
BIP	16		333			60	25		20	Flip-chip	CS2800	Cherry Semi	10
	18		325			60	18		20		CS2500G	Cherry Semi	
	22		299			61	24		20	Photosensor on-chip	CS3500	Cherry Semi	
			479			88	36		20	Micropower	CS3100	Cherry Semi	15
			479			88	36		20		CS3200L	Cherry Semi	
	23		522						50	Programmable Bandgap Reference	CS8000	Cherry Semi	
	24		437			96	36		20		CS3000F	Cherry Semi	
	25		533			142	26		15	LSTTL	CS7600	Cherry Semi	
			695			123	52		20		CS3600	Cherry Semi	
Bipolar	18		232			42	31		5		GENESIS 2200E	Cherry Semi	20
	26	2	200	64	50	102	41		5		GENESIS 6000	Cherry Semi	
	28		801			141	52		5		GENESIS 4000M	Cherry Semi	
	40		1178	70		199	103		5		GENESIS 5000	Cherry Semi	
i ² L	26		490	64	50				12	143 NPN/PNP Transistors	CS1100	Cherry Semi	
	30										CS1500	Cherry Semi	
	40		400	256		200	69		5		GENESIS 1400	Cherry Semi	
Custom Arrays													
BIP	14		96			27	14	1	20	Accepts Macro/Micro Cell Structures	MMA	CustomArrays	25
	18		175			46	20	1	20	Accepts Macro/Micro Cell Structures	MMB	CustomArrays	
	20		254			60	30	1	20	Accepts Macro/Micro Cell Structures	MMC	CustomArrays	
	25		366			78	36	2	20	Accepts Macro/Micro Cell Structures	MMD	CustomArrays	
	28		479			90	46	2	20	Accepts Macro/Micro Cell Structures	MME	CustomArrays	
	30		627			116	60	3	20	Accepts Macro/Micro Cell Structures	MMF	CustomArrays	
	38		775			134	70	3	20	Accepts Macro/Micro Cell Structures	MMG	CustomArrays	
	42		925			256	84	3	20	Accepts Macro/Micro Cell Structures	MMH	CustomArrays	
	46		1073			178	98	3	20	High-Current NPN Transistors	MMJ	CustomArrays	
Bipolar	16					28	24	4	40	Accepts Macro/Micro Cell Structures	MVA	CustomArrays	35
	20					48	33	4	40	Accepts Macro/Micro Cell Structures	MVC	CustomArrays	
	24					66	47	6	40	Accepts Macro/Micro Cell Structures	MVE	CustomArrays	
	28					80	60	6	40	Accepts Macro/Micro Cell Structures	MVG	CustomArrays	
	36					120	93	8	40	Accepts Macro/Micro Cell Structures	MVJ	CustomArrays	
			1200			240	181	8	40	Can be used to >40 V	MV-Family	CustomArrays	
	49		1350			360	200	3	20	Can be used to >20 V	MM-Family	CustomArrays	40
ECI Semiconductor													
Bipolar	14		70			23	8		20		ECIS020C	ECI Semi	
	18		90			38	12		20		ECIS020J	ECI Semi	
			132			71	22		20		ECIS020H	ECI Semi	
	20		150			59	18		20		ECIS020G	ECI Semi	45
	24		175			78	24		20		ECIS020L	ECI Semi	
			252			94	41		20		ECIS020F	ECI Semi	
	28		360			150	52		20		ECIS020M	ECI Semi	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Linear & Linear/Digital Arrays (Cont'd)

Manufacturer	Total Bonding Pads	Linear Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Digital Equiv. 2-Input Gates	Gate Delay ns @ V	Uncommitted Transistors NPN	PNP	Number Capacitors	Supply Voltage, V	Comments	Device	Source	Line
ECI Semiconductor CMOS	22 32 38 44 52 60 80		180 360 600 900	250 140 200 270 440 630 800	8/15V 8/15V 15@5 8/15V 8/15V 8/15V 8/15V				18 15 15 15 15 18 18		ECIML50 ECIMCA ECIMCB ECIMCC ECIMCD ECIFE600 ECIFE500	† ECI Semi † ECI Semi † ECI Semi † ECI Semi † ECI Semi † ECI Semi † ECI Semi	(Cont'd) 5
Exar BIP	14 16 18 24 28 38 40 48		110 209 260 300 200 230 260 309 401 251 472 127 539 812 218 901 290			23 50 60 69 48 34 38 60 72 95 80 97 102 127 144 148 218 224 290	8 16 18 12 15 16 12 18 22 43 26 36 62 127 64 56 218 70 290		20 36 20 20 20 75 20 20 20 36 20 20 20 26 36 20 26 38 48	6 Shottky diodes 15 Shottky diodes 16 Shottky diodes High voltage array 4 JFETs, ion implant resistors Ion implant resistors, low noise Transistors are programmable as NPN or PNP 8 JFETs, ion implant resistors Transistors are programmable as NPN or PNP 8 JFETs, ion implant resistors Transistors are programmable as NPN or PNP	XR-C100 XR-D100 XR-A100 XR-B100 XR-E100 XR-X100 XR-J100 XR-G100 XR-H100 XR-U100 XR-L100 XR-F100 XR-CA600 BETA100 XR-V100 XR-M100 BETA180 XR-W100 BETA240	Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar Exar	10 15 20 25
I ² L	40		401	256	50/20 μ A	45	12		7	18 I/O cells	XR400	Exar	
GEC Plessey Semiconductors BIP	14 15 16 18 19 20 21 24 26 27 28 30 33		110 162 194 260 170 187 314 382 264 310 378 278 300 416 437 571 572			22 27 50 59 38 48 56 72 48 60 60 81 69 80 96 72 159	8 14 16 18 12 15 22 22 20 18 30 28 12 26 36 57 58		20 20 36 20 20 20 20 20 20 20 24	Repeat cell structure to facilitate macros and design transfer between arrays Repeat cell structure to facilitate macros and design transfer between arrays Repeat cell structure to facilitate macros and design transfer between arrays All arrays have dedicated bandgap reference Repeat cell structure to facilitate macros and design transfer between arrays Repeat cell structure to facilitate macros and design transfer between arrays Repeat cell structure to facilitate macros and design transfer between arrays	MOC MMA MOD MOA MOJ MOE MOQ MOH MMB MOG MMC MOR BAA1000 MOB MOL MOF MOP BAA2000 ULA 1P MMD MOM MME MMF	GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey	30 35 40 45

¹ Delay conditions: 2-Input NAND driving 2 NANDs (FO = 2), 5V supply, 70°C, worst-case processing.

IC MASTER

ASIC/CUSTOM—Linear & Linear/Digital Arrays (Cont'd)

Manufacturer	Total Bonding Pads	Linear Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Digital Equiv. 2-Input Gates	Gate Delay ns @ V	Uncommitted Transistors NPN	PNP	Number Capacitors	Supply Voltage, V	Comments	Device	Source	Line	
GEC Plessey Semiconductors BIP	34		405	338	40 to 500	214		2	16.5	All arrays have dedicated bandgap reference	ULA 3P MON	GEC Plessey	(Cont'd)	
	40		1072			182	70		20			GEC Plessey		
	41		1058			134	70	3	20	Repeat cell structure to facilitate macros and design transfer between arrays	MMG	GEC Plessey		
	42		525	578	40 to 500	278		2	16.5	All arrays have dedicated bandgap reference	ULA 6P	GEC Plessey		
	45		1264			164	84	3	20	Repeat cell structure to facilitate macros and design transfer between arrays	MMH	GEC Plessey	5	
	49		1455			178	98	3	20	Repeat cell structure to facilitate macros and design transfer between arrays	MMJ	GEC Plessey		
	50		645	882	40 to 500	342		2	16.5	All arrays have dedicated bandgap reference	ULA 9P	GEC Plessey		
	54		705	1152	40 to 500	374		2	16.5	All arrays have dedicated bandgap reference	ULA 11P	GEC Plessey		
CML	18		530	30	230	199		2	1-5.5	Gate Current 2.4μA	ULA03G	GEC Plessey	10	
	24		1012	98	230	441		2	1-5.5	Gate Current 2.4μA	ULA1G	GEC Plessey		
	28		1408	162	230	649		2	1-5.5	Gate Current 2.4μA	ULA2G	GEC Plessey		
	32		1868	242	230	897		2	1-5.5	Gate Current 2.4μA	ULA3G	GEC Plessey		
	36		2392	338	230	1185		2	1-5.5	Gate Current 2.4μA	ULA4G	GEC Plessey		
	40		2980	450	230	1329		2	1-5.5	Gate Current 2.4μA	ULA5G	GEC Plessey		
	44		3632	578	230	1977		2	1-5.5	Gate Current 2.4μA	ULA6G	GEC Plessey	15	
CMOS	30		602			155	148	84	15		MLB	GEC Plessey		
	42		930	199		414	398	84	15	16 dedicated flip-flops, switched capacitor array	MLA	GEC Plessey		
CMOS 2.5 μ	68	2 8 8 16 20	8 8 10 10	1600 1920 1920 1920 1920	0.9@10 0.9@10 0.9@10 0.9@10 0.9@10				10 10 10 10 10		MA6005 MA6003 MA6004 MA6002 MA6001	GEC Plessey GEC Plessey GEC Plessey GEC Plessey GEC Plessey	20	
Gennum BIP	14		106			27	9	3	20	Component Array	LA204	Gennum (3493)	25	
	18		177			48	14	3	20	Component Array	LA202	Gennum (3493)		
	24		224			70	20	4	20	Modula Series Library	LA253	Gennum (3493)		
			301			85	26	3	20	Component Array	LA201	Gennum (3493)		
	32		380			116	34	4	20	Modula Series Library	LA252	Gennum (3493)		
	40		483			152	49	4	20	Modula Series Library	LA251	Gennum (3493)		
2 GHz BIP	14		140			116	24	1	15	Array may be doubled-up in one IC	GA911	† Gennum (3493)		
Harris Semiconductor * Bi-Polar		4 8 15	8 15 13			336 260 300	336 260 300	300 44 120	10 20 40	DI Tile Array DI Tile Array DI Tile Array	HTA3000 HTA2000 HTA1000	† Harris † Harris † Harris	(3525) (3524) (3523)	30
Holt Integrated Circuits 3μCMOS	64	48	200	340		4		10	0.3—18		HI5300	† Holt		
Honeywell Bipolar	16		Macros Macros	4 20	20 20	116 190	100 140	19 12	33 33	RTL/DTL Replacement 54, LS, S, H Replacement	BDA TGA80	† Honeywell † Honeywell	35	
	26	13	290 Macros			164 240	32 82	8 8	5 33	JFETs, Thin Film, TILE Approach	HABDA HBA100	Honeywell † Honeywell	(Continued)	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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ASIC/CUSTOM—Linear & Linear/Digital Arrays (Cont'd)

Manufacturer	Total Bonding Pads	Linear Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Digital Equiv. 2-Input Gates	Gate Delay ns @ V	Uncommitted Transistors NPN	PNP	Number Capacitors	Supply Voltage, V	Comments	Device	Source	Line
Honeywell Bipolar	36 48 52	13 Power Op Amps	Macros Macros Macros	80 132 10	20 20 20	630 453 164	372 156 32	48 18 8	33 33 33	54, LS, S, H Replacement JFETs, Thin Film, TILE Approach J-FETs, TFR	TGA150 HBA180 HPBDA	o† Honeywell o† Honeywell o† Honeywell	(Cont'd)
TTL	24		280			60		100	5	Replaces TTL	TGA	Honeywell	
MCE BIP	14		109 109			16 22 62	18 8 8	2	20 20 20	Power array	MCEP20A MCEA20C MCEA20CS	MCE MCE MCE	5
	16		194 194 245 259 259			50 100 60 59 59	16 16 28 18 18		40 40 40 20 20		MCEA40DS MCEA40D MCEA40AS MCEA20A MCEA20AS	MCE MCE MCE MCE MCE	10
	18		170 170 187 187 308 308 382 382			38 38 48 48 60 60 72 74	12 12 15 15 18 18 22 22		20 20 20 20 20 20 20 20		MCEA20J MCEA20JS MCEA20E MCEA20ES MCEA20G MCEA20GS MCEA20H MCEA20HS	MCE MCE MCE MCE MCE MCE MCE MCE	15
	20		— 218			27 62	12 10		40 40	5 op amps, power array	MCEP40A MCEA40BS	MCE MCE	20
	24		301 301 416 416 437 437 464			69 69 80 80 96 96 96	12 12 26 26 36 36 36		20 20 20 20 20 20 20		MCEA20B MCEA20BS MCEA20L MCEA20LS MCEA20F MCEA20FS MCEA20WS	MCE MCE MCE MCE MCE MCE MCE	25
	28		812			149 149	56 56		20 20		MCEA20M MCEA20MS	MCE MCE	30
Micrel CMOS/DMOS	78	4	180	200		200		2	20–100	CMOS/DMOS High Voltage Array.	MPD8020	Micrel (3577)	
Micro Linear BIP	24	2	926 993			178 173	78 79	8 7	12 12	f _t ± 1GHz ft = 1 GHz	FB3610 FB308	o† MicroLinear MicroLinear	
	28	2	1643 1426	50	2	330 238	82 138	14 10	12 12	f _t ± 1GHz ft = 1 GHz	FB324 FB312	o† MicroLinear MicroLinear	35
	32		564 1348			116 268	36 124	4 12	40 12	f _t ± 1GHz f _t ± 1GHz	FB3410 FB3620	o† MicroLinear o† MicroLinear	
	42	2	1168	142	4	188	108	8	12	ft = 1 GHz	FB330	MicroLinear	
	44	2	1847			307	181	13	12	ft = 1 GHz	FB315	MicroLinear	40
	46		2392			424	232	24	12	f _t ± 1GHz	FB3630	o† MicroLinear	
NCM Corporation Planar	24 28					100 149	39 52		25 25		NCM5001Z NCM5002Z	NCM NCM	
NEC Electronics CMOS	54–266 88–334	0 0	18 18	300–20000 2000–45000	0.9 0.6	0 0	0 0	0 0	5.5 5.5	1.5 μm 1.2 μm	CMOS4 CMOS5	o NEC o NEC	(3589) (3589)
OnChip Systems Analog CMOS	24 30 44 46 56 64	18 18 16 46 92 52	30 60 88 9 151 103	108 128 540 240 300 930	2.5@10 2.5@10 2.5@10 2.5@10 2.5@10 2.5@10						Linear Array 1 Linear Array 2 Linear Array 3 Linear Array 4A Linear Array 5 Linear Array 6	OnChip Sys OnChip Sys OnChip Sys OnChip Sys OnChip Sys OnChip Sys	50

¹ Delay conditions: 2-Input NAND driving 2 NANDs (FO = 2), 5V supply, 70°C, worst-case processing.

IC MASTER

ASIC/CUSTOM—Linear & Linear/Digital Arrays (Cont'd)

Manufacturer	Linear			Digital			Uncommitted		Supply Voltage, V	Comments	Device	Source	Line
Technology	Total Bonding Pads	Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Equiv. 2-Input Gates	Gate Delay ns @ V	Transistors	NPN	PNP					
Raytheon Semiconductor BIP	24	12	170			49	19		2-32 ± 18	Four 100 mA NPN transistors, 148 aluminum feedthroughs, 176 thin-film resistors, dual-layer metal.	RLA80	† Raytheon	
						39	16				RLA120	Raytheon	
	44		312			46	10		2-32		RLA160	Raytheon	
	Bipolar	32	10	370		71	29		5	Linear FET Macrocell Array	RFA120	Raytheon	
S-MOS Systems CMOS	48			513	2.0				7.0		SLA6050	S-MOS	5
	80			2232	1.0				7.0		SLA7220	S-MOS	10
	112			3432	1.0				7.0		SLA7340	S-MOS	
	136			4900	1.0				7.0		SLA7490	S-MOS	
	158			6210	1.0				7.0		SLA7620	S-MOS	
	178			8000	1.0				7.0		SLA7800	S-MOS	
	196			9250	1.0				7.0		SLA7930	S-MOS	
SGS-THOMSON BiP	16		600	54	3	74	60	6	15	Tile Structure	TSFJ04	† SGS-Thomson	15
	20		919	135	3	107	88	10	15	Tile Structure	TSFJ06	† SGS-Thomson	
	24		1554	162	3	235	103	1	15	Tile Structure	TSFJ09	† SGS-Thomson	
	28		906			188	28	4	15	Tile Structure	TSK09	† SGS-Thomson	
			1964	324	3	267	131	12	15	Tile Structure	TSFJ13	† SGS-Thomson	
	40		906			188	28	4	15		TSK09 Series	SGS-Thomson	
Sipex-HSD BiP	26		4 Tiles			90	90	60	35	Thin-film resistors and dual level metal	SP2101	† Sipex-HSD	20
	40		16 Tiles			216	216	26	35	With 16 JFETS and dual level metal	SP1204	† Sipex-HSD	
	46		12 Tiles			242	242	160	35	Thin-film resistors and dual level metal	SP2104	† Sipex-HSD	
	54		20 Tiles			390	390	240	35	Thin-film resistors and dual level metal	SP2107	† Sipex-HSD	
	Bipolar	24	16	1240		220	220	14	35/20		SP1104	† Sipex-HSD	
Solitron Devices Bipolar									40	Smart-Power Analog Circuit Array	W40M	Solitron	
STC Components BIP	32		400	125	0.5	368	28		10	Modular Array with user defined resistors and capacitors	VAM400	STC	25
	42		384	120	0.3	384			10	Partially Cellular Array with user defined resistors and capacitors	VAS380	STC	
	44		1476	260	0.148 - 0.92	1476			12	Modular array family with user defined resistors, capacitors and gate speed/power	VAE110	† STC	
	62		416	140	0.2	416			10	Partially Cellular Array with user defined resistors and capacitors	VAH500	STC	
	68		2430	600	0.3	2430			10	Cellular Array with user defined resistors and capacitors	VAS2400	STC	
	74		3456	619	0.148 - 0.92	3456			12		VAE120	† STC	
	104		8136	1555	0.148 - 0.92	8136			12		VAE220	† STC	
	134		13536	2491	0.148 - 0.92	13536			12		VAE230	† STC	
	164		18576	3427	0.148 - 0.92	18576			12		VAE240	† STC	
			21636	4003	0.148 - 0.92	21636			12		VAE330	† STC	
	194		29736	5515	0.148 - 0.92	29736			12		VAE340	† STC	
Tektronix BIP	16					74	25	4	34	44 Schottky Diodes, f _t = 8.5 GHz	QuickChip 6-10	† Tektronix	35
	22		324			78	38	10	32	QuickChip 2 with Schottkys	QuickChip 2K-30	† Tektronix	

(Continued)

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Linear & Linear/Digital Arrays (Cont'd)

Manufacturer	Total Bonding Pads	Linear Dedicated Op Amps, A/D, etc.	Total Other Lin. Components	Digital Equiv. 2-Input Gates	Gate Delay ns @ V	Uncommitted Transistors NPN	Uncommitted Transistors PNP	Number Capacitors	Supply Voltage, V	Comments	Device	Source	Line
Tektronix BIP	24		626			150	82	24	32	Array, ft = 6.5 GHz	QuickChip 2S	(Cont'd)	
	32					224	100	16	34	104 Schottky Diodes, $f_t = 8.5$ GHz	QuickChip 6-40	† Tektronix	
	36		966			214	110	20	32	Array, ft = 6.5 GHz	QuickChip 2	† Tektronix	
	44		174			280	146	26	32	QuickChip 2 with Schottkys	QuickChip 2K-130	† Tektronix	
	54					600	300	48	34	240 Schottky Diodes, $f_t = 8.5$ GHz	QuickChip 6-120	† Tektronix	5
	66		1356	300	0.4	294	174	16	32		QuickChip 4	† Tektronix	
	70		2136			480	240	72	32	Array, ft = 6.5 GHz	QuickChip 2L	† Tektronix	
Bipolar	16		44			74	25	4	34		QUICKCHIP6-10	† Tektronix	
	22		56			78	38	10	32		QUICKCHIP2K-30	† Tektronix	
	24					150	82	24	32		QUICKCHIP2S	† Tektronix	10
	32		104			224	100	16	34		QUICKCHIP6-40	† Tektronix	
	44		174			280	146	26	32		QUICKCHIP2K-130	† Tektronix	
	54		240			4600	300	48	34		QUICKCHIP6-120	† Tektronix	
	70					480	240	72	32		QUICKCHIP2L	† Tektronix	
Universal Semiconductor CMOS	62	228	40	660	1.6	x	x	528	18	Silicon Gate	USI6000	† Universal	15

¹ Delay conditions: 2-Input NAND driving 2 NANDs ($F_O = 2$), 5V supply, 70°C, worst-case processing.

ASIC/CUSTOM—Standard Cells

Manufacturer Device Process	Geometry (μ m)	Interconnections		Delay 2-Input NAND Gate [†] (ns)	A/D	D/A	Cell Library Includes					Supply Voltage, V	Comments	Library or Process Name	Source	Line
		Metal	Poly				Op Amp	Core μ P	RAM	ROM	PLA					
Advanced Linear Devices																
Si-Gate CMOS	5	1	1		x	x	x					± 1 to 6	Standard Cell Analog, CD4000/HC Logic Cell Library available.	CMOS	o† AdvLinear	
SiGate CMOS	3	x	x	3			x					2-15	13 Analog STD cells, 38 digital SSI cells	FSK11	o† AdvLinear	
		x	x	3			x					2-15	13 Analog STD cells, 38 digital SSI cells	FSK12	o† AdvLinear	
SiGateCMOS	5	X	X		X	X	X					± 1 to ± 6 V	STD Cell Analog, SPICE Sim. Available, Hardware Breadboard Kits Available	SiGateCMOS	o† AdvLinear	
Analog Devices																
LC ² MOS	3	1	1	3	x	x	x		x	x	x	± 5	Mixed analog and digital for 12-bit systems.	LC2MOS	o† AD	5
AT&T ECL	1.5	3		0.2									ECL 10K, ECL 10 KH, Schottky TTL compatible I/O.	SFOXIL	o AT&T	
		3	2	0.08	x	x	x		x				ECL 10K, ECL 10 KH, Schottky TTL compatible I/O.	BEST-1	AT&T	
Avasem Corp.																
CMOS	1.25	2	1	0.8		x			x	x	x	5		CELL8	o† Avasem	
	1.5	2	1	1		x			x	x	x	5		CELL3	o† Avasem	
	2	2	1	1.5	x	x	x	x	x	x	x	5		CELL2	o† Avasem	10
		2	2	1.5	x	x	x	x	x	x	x	5		CELL5	o† Avasem	
	3	1	1		x	x	x		x	x	x	10		CELL6	o† Avasem	
		1	1	2.5	x	x	x		x	x	x	5		CELL1	o† Avasem	
		1	2		x	x	x		x	x	x	10		CELL7	o† Avasem	
		1	2	2.5	x	x	x		x	x	x	5		CELL4	o† Avasem	15
CMOS, Si-gate	1.25	2	1	0.8	x	x	x		x	x		3-5	Multiple Sourcing	MULTI-CELL8	o† Avasem	
	1.5	2	1	1	x	x	x	x	x	x		3-5	Multiple Sourcing	MULTI-CELL3	o† Avasem	
	2	1	2	1.5	x	x	x		x	x		3-5	Multiple Sourcing	MULTI-CELL9	o† Avasem	
		2	1	1.5	x	x	x	x	x	x		3-5	Multiple Sourcing	MULTI-CELL2	o† Avasem	
		2	2	1.5	x	x	x		x	x		3-5	Multiple Sourcing	MULTI-CELL6	o† Avasem	20
	3	1	2	2.5	x	x	x		x	x		2-10	Multiple Sourcing	MULTI-CELL7	o† Avasem	
	5	1	2	7	x	x	x		x	x		3-15	Multiple Sourcing	MULTI-CELL5	Avasem	
Exar CMOS	2	2	2	1	x	x	x					3 to 15	Includes Oscillators, Switched Capacitor Filters and Phase Locked Loops	N2000	Exar	
	3	2		1			x					5	49 Digital Cells, 6 Analog Cells	P3000	Exar	
Fujitsu CMOS, Si-Gate	1.3	2/3	1	0.7				x	x	x	x	5	Cell logic is compatible with the UHB library	STD CELL	Fujitsu	25
GEC Plessey Semiconductors																
CMOS	2	2	1	1.7	x	x			x	x	x	5	RAM, ROM, PLA are software generated	Megacell	GEC Plessey	
CMOS	3	2	2	1.4	x	x	x		x	x		10		MACROMOS I	GEC Plessey	
CMOS, Si-Gate	2.5	2		1.4	x	x	x	x	x	x	x	3 to 7		CMOS	GEC Plessey	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Standard Cells (Cont'd)

Manufacturer Device Process Technology	Geometry (μm)	Interconnections Metal Poly	Delay 2-Input NAND Gate ¹ (ns)	A/D	D/A	Cell Library Includes Op Amp	Core μP	RAM	ROM	PLA	Supply Voltage, V	Comments	Library or Process Name	Source	Line
GEC Plessey Semiconductors CMOS, Si-Gate	5	1 1	6	x	x	x					3 to 7		CMOS	GEC Plessey	
CMOS, SOS	3	1 1	2			x		x	x		3 to 8		CELLSOS	GEC Plessey	
NMOS	5	1	20								5		NMOS	GEC Plessey	
SOS	2.5	2 1	1.2					x	x		5	Radiation Hardened	MACROSOS I	GEC Plessey	
Gould AMI CMOS	1.0	2 1	.37				x	x	x	x	2.5-5.5	Dual Port Ram, Slew rate Buffers	CYB	† Gould AMI	5
	1.25	2 1	.5				x	x	x	x	2.5-5.5	MSI, 7400 Functions, various megacells	CAB	† Gould AMI	
	1.5 Digital, 3.5 Analog	2 2	.5	x	x	x	x	x	x	x	0-12 OR -6 + 6	Same digital library as 1.25μ process. Parameterized analog building block generator.	ABX	† Gould AMI	
	3	2 2		x	x	x	x	x	x		10 to 30	Mixed Mode (analog and digital process)	CCI	Gould AMI	
CMOS, Si-Gate	3	1 1	5			x		x			2.5 to 10		SLM CMOS	† Gould AMI	
Harris Semiconductor Bi-Polar	2	2	8.0/4.0			x					10		HDI3000	† Harris (3522)	10
	10	1	0.32/0.06								80-200		HDI4000	† Harris	
		2	0.75/0.4			x					40		HDI1000	† Harris (3520)	
		2	1.2/1.0			x					20		HDI2000	† Harris (3521)	
BiCMOS	1.2	2 2	800ps	x	x	x		x	x	x	10		HBC1000	† Harris	15
	3	2 2	2	x	x	x					16		HBC2500	† Harris (3519)	
CMOS	1.5	2 1	0.8	x	x	x	x	x	x	x	5		HSC4000	† Harris	
	2	2 1	0.8				x	x	x		5		HSC1000RH	† Harris	
	3	2 1	2.5	x	x	x		x			16		BiMOS E	† Harris	
CMOS, Si-Gate	3	2 1	<2								2 to 10		CMOS Library	Harris	20
CMOS, SOS	3	1 1	4			x					3 to 12		SOS-2 Library	† Harris	
	5	1 1	8			x					3 to 12		SOS-1 Library	† Harris	
Holt Integrated Circuits CMOS	2	1 2	3			x	x	x	x		1.5-15	35 Analog Cells	CB-ASIC	† Holt	
	3	1 2	3	x	x	x		x	x		1.5 to 15	Digital 9 V Maximum, Analog 15 V Maximum	CMOS	† Holt	
Honeywell RiCMOS	1.2	2 1	0.9					x	x		5	QML - Rad Hard	RSCL	† Honeywell	
Hughes CMOS, Si-Gate	2.5										4 to 10		HCMOS Library	† Hughes	25

¹ Delay conditions: 2-Input NAND driving 2 NANDs (FO = 2), 5V supply, 70°C, worst-case processing.

ASIC/CUSTOM—Standard Cells (Cont'd)

Manufacturer Device Process	Geometry (μm)	Interconnections		Delay 2-Input NAND Gate ¹ (ns)	A/D	D/A	Cell Library Includes					Supply Voltage, V	Comments	Library or Process Name	Source	Line
		Metal	Poly				Op Amp	Core μP	RAM	ROM	PLA					
Integrated Circuit Systems CMOS, Metal Gate	12	1		30			x			x	x	5-35		CMOS Library	IntCirSys	5
		1		30			x			x	x	5-35		CMOS Library	IntCirSys	
CMOS, Si-Gate	1.2	2	1	0.8-1.2	x	x	x		x	x	x	3-5		CMOS Library2	IntCirSys	10
	1.5	2	1	1.2-1.8	x	x	x	x	x	x	x	3-5		CMOS Library2	IntCirSys	
	2μm	2	1	1.5-4	x	x	x	x	x	x	x	4.5-5.5	ICS Custom Library	CMOS Library	IntCirSys	
	3	2	1	4	x	x	x	x	x	x	x	5	ICS Custom Library	CMOS Library	IntCirSys	
	3.0	1	1	2-3	x	x	x		x	x	x	3-10		CMOS Library2	IntCirSys	
	5	1	1	10	x	x	x		x			5 to 10	ICS Custom Library	CMOS Library	IntCirSys	
CMOS, SiGate	5.0	1	1	4.6	x	x	x		x	x	x	5-18		CMOS Library2	IntCirSys	15
NMOS, Metal-Gate	4.5	1		20	x	x	x	x	x	x	x	5 to 10		CMOS Library	IntCirSys	
	5	1	1	20	x	x	x	x	x	x	x	5 to 10		CMOS Library	IntCirSys	
NMOS, Si-Gate	3	1	1	4	x	x	x	x	x	x	x	5	ICS Custom Library	CMOS Library	IntCirSys	20
Intel CMOS, Si-Gate	2	1	1	1.0				x	x	x	x	5	Currently in Beta sites	CHMOS-1 Library	Intel	
SiGate CMOS	1.5			0.7	x	x	x	x	x	x	x	5		CHMOS III	† Intel	
International Microcircuits CMOS, Si-Gate	3	2	1	2	x	x	x		x	x	x	3.5 to 8		CMOS Library	IMI	25
International Microelectronics Products CMOS	1.2	2	2		x	x	x		x	x		3,5	TTL Compatible Comparators, V. Ref	DCL 1.2	◊ IMP	
		2	2		x	x	x		x	x		3,5		ACL 1.2	◊ IMP	
		2	2		x	x	x		x	x		3,5		MxCMOS 1.2	◊ IMP	
	2	2	2		x	x	x		x	x		3,5	TTL Compatible Comparators, V. Ref	DCL 2	◊ IMP	30
		2	2		x	x	x		x	x		3,5		ACL 2	◊ IMP	
		2	2		x	x	x		x	x		3,5		MxCMOS 2	◊ IMP	
	3	2	2		x	x	x		x	x		3,5,10	TTL Compatible Comparators, V. Ref	DCL 3	◊ IMP	35
		2	2		x	x	x		x	x		3,5,10		ACL 3	◊ IMP	
		2	2		x	x	x		x	x		3,5,10		MxCMOS 3	◊ IMP	
	5	1	2		x	x	x		x	x		5,10,18	Comparators, V. Ref	ACL 5	◊ IMP	40
		1	2		x	x	x		x	x		5,10,18		MxCMOS 5	◊ IMP	
LSI Logic HCMOS	1.5	2M	1P	0.7				x	x	x		3/6	High Density, High Performance ASIC; RAM and ROM capabilities; up to 100,000 usable gates.	LCB15	LSI Logic	
LSI Logic HCMOS	0.7	2	1	0.45				x	x	x		3/6	High DensityDd, high performance ASIC; RAM & ROM capabilities; up to 200K usable gates.	LCB007	† LSI Logic	45
Micro-Rel BIP, J.I., D.I.	8	1										100		High Voltage	† Micro-Rel	
BIP, J.I., D.I.	8	1										40	MOS capacitor available, dielectric isolation, 1.3 Kohms/square CrSi resistors	High Voltage	Micro-Rel	
BIP, J.I., D.I.	8	1										20	100Kohms/square CrSi resistors available	Low Voltage	† Micro-Rel	
CMOS	3	2	1	2.5	x	x	x					2-10	MOS capacitor available, 1.3 Kohms/square CrSi resistors 200ppm/C* for linear applications.	D3 Library	† Micro-Rel	
	5	1	1	5	x	x	x					2-18	Same as 3μ CMOS	D5 Library	† Micro-Rel	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

ASIC/CUSTOM—Standard Cells (Cont'd)

Manufacturer Device Process	Geometry (μm)	Interconnections Metal	Poly	Delay 2-Input NAND Gate ¹ (ns)	A/D	D/A	Op Amp	Core μP	RAM	ROM	PLA	Supply Voltage, V	Comments	Library or Process Name	Source	Line
National Semiconductor	2	1		0.17					x	x		5		FSA Series	National	
ASPECT	0.8	1		0.05					x	x		5		NSA Series	National	
NCM Corporation	5	1	0	12			x		x	x	x	15		9000	◊ NCM	
CMOS Metal-Gate	3	1	1	3			x		x	x	x	3.5 to 12		4000 Series	NCM	
CMOS, Si-Gate	1	1	1	7			x		x	x	x	15		8000/3	◊ NCM	
	5	1	1	12			x		x	x	x	15		8000/5	◊ NCM	5
NCR Microelectronics	1.5	2	1	1.3			x	x	x	x		4.5 to 5.5	DPRAM, ALU, Counter, and Mux Generators	NCRVS1500	NCR	
CMOS Si-Gate	2	1 or 2	1	1.5 to 4	x	x	x	x	x	x	x	4.5 to 5.5		NCRVS2000-D	◊ NCR	
NEC Electronics	1.2	3	0	0.46	x	x	x	x	x	x		5		SC5	◊ NEC	(3589)
CMOS	3	0	0	0.56	x	x			x	x		5.5	Up to 60000 Gates	μPD92XXX	◊ NEC	10
	3	0	0	0.56	x	x			x	x		5.5	Up to 60000 Gates	μPD92XXX(SC5)	◊ NEC	
	1.5	2	0	0.9	x	x			x	x		5		μPD92000	◊ NEC	
	2	0	0	0.55	x	x			x	x		5	Up to 17,000 Usable Gates	CMOS-4A	◊ NEC	
	2	0	0	0.9	x	x			x	x		5.5	Up to 20000 Gates	μPD91XXX	◊ NEC	
	2	0	0	0.9	x	x			x			5		μPD91000	◊ NEC	15
CMOS, SiGate	1.5	2	1									4-5		KG30K	† NEC	
	2	1	1						x	x		4-5		KG40K	† NEC	
	2	1	1		x	x	x		x	x	x	4-5		STD15	◊ NEC	
	2.0	2	1		x	x	x	x	x	x	x	4-5		STD20	◊ NEC	
Newbridge Microsystems	1.2	2	1	0.5				x	x	x	x	5	Rad Hard, VHSIC Compatible	Standard Cell	Newbridge	20
CMOS	2	1	1	1.5				x	x	x	x	5		CMOS	Newbridge	
	3	1	1	2				x	x	x	x	5		CMOS Library	Newbridge	
CMOS P-Well	1.6	4	3.2	0.8				x	x	x	x	5	Dual Metal	DMC1.6	Newbridge	
	2	5	4	1				x	x	x	x	5	Dual Metal	DMC2	Newbridge	
	2.4	6.4	4.8	1.2				x	x	x	x	5	Single Metal	SMC2.4	Newbridge	25
	3	8	6	1.5				x	x	x	x	5	Single Metal	SMC3	Newbridge	
OKI Semiconductor	1.2	2	1	0.77				x	x	x	x	5		MSM91U000	◊ OKI	(3607)
CMOS	1.5	2	1	1.2					x	x	x	5		91V000	◊ OKI	
	2	2	1	1.32				x	x	x	x	5		MSM91V000	◊ OKI	
	2	2	1	1.7				x	x	x	x	5		MSM91000	OKI	30
	2	2	1	1.85				x	x	x	x	5		91H000	◊ OKI	
	3	2						x	x	x				MSM91H000	◊ OKI	
	3	2						x	x	x				MSM90000	OKI	
Panasonic	1.2	2	1	2.1	x	x	x	x	x	x	x	5	70K Gates Max	MN76000	◊ Panasonic	
CMOS	1.5	2	1	1.4	x	x	x	x	x	x	x	5	50K Gates Max	MN73000	◊ Panasonic	35
Ricoh	2	2		2					x	x	x	-0.3 to 7	Full CAD Support System	RSC20	Ricoh	
CMOS, Si-Gate																
S-MOS Systems	1.2	2	1	0.6				x	x	x		5		SSC3000	◊ S-MOS	
CMOS	1.8	2	1	0.9					x	x		5		SSC1000	◊ S-MOS	
Sanyo	1.5	2	1		x	x			x	x	x	3-5.5	Standard Cells	LC97000A	◊ Sanyo	
N-Sub (P-well)	1.2	2	1		x	x			x	x	x	3-5.5	Standard Cells	LC98000A	◊ Sanyo	40
N-Sub (Twin Tub)																

¹ Delay conditions: 2-Input NAND driving 2 NANDs (FO = 2), 5V supply, 70°C, worst-case processing.

(Cont'd)

† Mil Temp Range (-55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ♦ Available in Surface Mount Package

ASIC/CUSTOM—Standard Cells (Cont'd)

Manufacturer Device Process		Geometry (μm)		Interconnections Metal Poly		Delay 2-Input NAND Gate ¹ (ns)		A/D	D/A	Cell Library Includes Op Amp Core μP RAM ROM PLA				Supply Voltage, V	Comments	Library or Process Name	Source	Line	
Vitesse Semiconductor GaAs E/D MESFET		0.6	3	1	0.12						x	x	x		-2/-5.2	500 to 200,000 Gates; CMOS, TTL, ECL or GaAs I/O	VCB50K	♦ Vitesse	
		0.6(eff)	4	1	0.05(NOR)						x	x	x		-2		H-GaAs III	♦ Vitesse	
VLSI Technology CMOS		1	2	1	0.35							x	x	x	5	Compilers	VGT300	♦ VLSI Tech	
			2	1	0.35							x	x	x	5	Compilers	VSC300	♦ VLSI Tech	
		1.0	2	1	0.28						x	x	x	x	5		VSC350	VLSI Tech (3742)	5
			2	1	0.28						x	x	x	x	5		VSC370	VLSI Tech (3742)	
		1.5	2	1	0.56						x	x	x	x	5	Compilers	VGT200	♦ VLSI Tech (3742)	
			2	1	0.56						x	x	x	x	5	Compilers	VSC120	♦ VLSI Tech (3742)	
		2	2	1	0.93						x	x	x	x	5	Compilers	VGT10	♦ VLSI Tech	
			2	1	0.93						x	x	x	x	5	Compilers	VSC10	♦ VLSI Tech	10
		3	2												5	Single Layer Metal Optional	CUSTOM/FOUNDRY	VLSI Tech	
CMOS, Si-Gate		3	2	1	5						x	x	x	x	5	Configurable cells	CMOS Library	VLSI Tech	
HCMOS		1.5	2	1								x	x	x	5		CMOS Library	VLSI Tech	
HMOS		2	2												5	Single Layer Metal Optional	CUSTOM/FOUNDRY	VLSI Tech	
		3	1												5		CUSTOM/FOUNDRY	VLSI Tech	15
Si-Gate CMOS		1	2		0.45 *										5		VSC320	VLSI Tech	
Waferscale Integration CMOS		1.2	1	2	0.60						x	x	x	x	3 to 6	Library includes SSI/MSI elements plus CMOS EPROM macro cells.			
			2	2	0.85						x	x	x	x	3 to 6	Specializes in large block cells. Also contains EPROM cells.	Modular-Cell	Waferscale	
																	Modular-Cell	Waferscale	
Western Design Center CMOS		0.5-3.0	2	1	1-3						x	x	x		1.2-5.5	WDC licenses the MPU and MCU Cores	W65C	WDC	(3754)
		1.5	2	1	1						x				1.8 to 6	W65C02 8-bit static and pseudostatic	W65C02	♦ WDC	(3754)
			2	1	1						x				1.8 to 6	W65C816 16-bit static and pseudostatic	W65C816	♦ WDC	20
ZyMOS CMOS, Si-gate		1.2	2	1	0.7										2-5.5		Zy70000	ZyMOS	
		1.5	2	1	0.9										2-5.5		Zy67000	ZyMOS	
		2	2	1	1.4										2-5.5		Zy60000	ZyMOS	

¹ Delay conditions: 2-Input NAND driving 2 NANDs (FO = 2), 5V supply, 70°C, worst-case processing.

IC MASTER

ASIC/CUSTOM—Gate Array Design Automation Tools

Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line	Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line
Advanced Micro Devices	M2018	x	x	x		XACT	AMD		Harris Semiconductor	IGC10000		x	x	x	CADEXEC	Harris	
	M2064	x	x	x		XACT	AMD			IGC20000		x	x	x	CADEXEC	Harris	
Applied Micro Circuits	ALL			x		AMCC	AMCC		Hitachi	HD61	x	x	x	x	HITACHI LOGICIAN	Hitachi DAZIX	65
		x	x		x	CAE-2000	Tek/CAE	5			x	x					
		x	x		x	GAWS	Tektronix		International Microcircuits	G4000	x	x	x	x	IMI	IMI	
		x	x		x	IDEASTATION	Mentor			IMI7000	x	x	x	x	LOGICIAN	DAZIX	
		x	x	x	x	LOGICIAN	DAZIX			4000 Series (8 μ)	x	x	x	x	EASYGATE	IMI	
		x	x		x	MERLYN-G	Tek/CAE	10		7000 Series (1.5 μ)	x	x	x	x	EASYGATE	IMI	
		x	x		x	SCALD	Valid		LSI Logic	LCA10000	x	x	x	x	MDE	LSI Logic	70
		x	x		x	TEGAS	Calma			LCBI5	x	x	x	x	MDE	LSI Logic	
	Q14000 Series	x	x	x	x	ERC-VRC	AMCC			LRH10000	x	x	x	x	MDE	LSI Logic	
	Q5000 Series	x	x	x	x	ERC-VRC	AMCC			LRH9000	x				DASH DESIGN VERIFIER	FutureNet	
Exar	XR-CM SERIES	x	x	x	x	GATEMASTER	DAZIX				x				LSI Logic	LSI Logic	75
	XR-30000 SERIES	x	x	x	x	GATEMASTER	DAZIX		Marconi Circuit Technology	MA2000A			x		ARRAY 2	Marconi	
Fujitsu	All BiCMOS		x	x	x	LCAD	Fujitsu	15			x				CASS	SilvarLisco	
	All CMOS		x	x	x	LCAD	Fujitsu				x				HILO	GenRad	
	All ECL		x	x	x	LCAD	Fujitsu				x				IDEASTATION	Mentor	80
	All LSTTL		x	x	x	LCAD	Fujitsu				x				LOGICIAN	DAZIX	
	AU(1.2μ)	x	x			HP	HP	20		MA4000			x		ARRAY 2	Marconi	
		x	x			IDEASTATION	Mentor				x				CASS	SilvarLisco	
		x	x			LASAR	Teradyne				x				HILO	GenRad	
		x	x			LOGICIAN	DAZIX				x				IDEASTATION	Mentor	85
		x	x			Valid/Sun-SCALD	Valid				x				LOGICIAN	DAZIX	
		x	x		x	ViewCAD	Fujitsu			MA8304			x		ARRAY 1	Marconi	
	AV(1.8μ)	x	x			HP	HP	25			x				CASS	SilvarLisco	
		x	x			IDEASTATION	Mentor				x				HILO	GenRad	
		x	x			LASAR	Teradyne				x				IDEASTATION	Mentor	90
		x	x			LOGICIAN	DAZIX				x				LOGICIAN	DAZIX	
		x	x			Valid/Sun-SCALD	Valid			MA9000			x		ARRAY 2	Marconi	
		x	x			ViewCAD	Fujitsu	30			x				CASS	SilvarLisco	
	AVM(1.8μ)	x	x			IDEASTATION	Mentor				x				HILO	GenRad	
		x	x			LASAR	Teradyne				x				IDEASTATION	Mentor	95
		x	x			LOGICIAN	DAZIX				x				LOGICIAN	DAZIX	
		x	x			Valid/Sun-SCALD	Valid			MS200A	x	x			SCALD	Valid	
	BiCMOS	x	x			HP	HP	35	Micro-Rel	3μ CMOS			x		-	Calma	
		x	x			IDEASTATION	Mentor				x				DAZIX		
		x	x			LOGICIAN	DAZIX			5μ CMOS	x			x	-	Cadence	
		x	x		x	ViewCAD	Fujitsu		Mitsubishi Electronics	ALL	x				DASH	FutureNet	100
	B1100	x	x			DASH	Fujitsu	40			x				IDEASTATION	Mentor	
		x	x			GATEMASTER	DAZIX				x				IKOS	Ikos	
		x	x			GATESTATION	Mentor				x				INTERGRAPH	Intergraph	
		x	x	x	x	LCAD	Fujitsu				x				ORCAD	OrCAD	
		x	x			SCALD	Valid				x				PROPRIETARY	Mitsubishi	105
	ECL	x	x			HP	HP	45			x				SERIES 9000	HP	
		x	x			IDEASTATION	Mentor				x				SUN 3-SUN 4	Valid	
		x	x			LOGICIAN	DAZIX		Motorola	HD6000	x	x	x	x	MIDAS	ControlData	
		x	x			Valid/Sun-SCALD	Valid			MCA800ECL	x	x	x	x	GATEMASTER	DAZIX	
		x	x	x	x	ViewCAD	Fujitsu				x				WACC	Motorola	110
	LSTTL	x	x			HP	HP	50		MC1300ALS	x				CAE-2	PCAD	
		x	x			IDEASTATION	Mentor		National Semiconductor	SCX2-WS-D-X	x	x	x	x	GATEMASTER	DAZIX	
		x	x			LASAR	Teradyne			SCX2-WS-F-X	x	x			DASH	FutureNet	
		x	x			LOGICIAN	DAZIX			SCX2-WS-H-X	x	x			HILO	GenRad	
		x	x			Valid/Sun-SCALD	Valid			SCX2-WS-M-X	x	x	x	x	GATESTATION	Mentor	115
		x	x			ViewCAD	Fujitsu			SCX2-WS-S-X	x				MERLYN-G	Tek/CAE	
		x	x			ViewCAD	Fujitsu			SCX2-WS-V-X	x	x	x	x	GATE DESIGNER	Valid	
GEC Plessey Semiconductors	CLA3000	x	x	x	x	CLASSIC	GEC Plessey	60	NCM Corporation	NCM 300XZ	x	x	x	x	ARIES	Applicon	
	CLA5000	x	x	x	x	CLASSIC	GEC Plessey			NCM 7001XZ	x	x	x	x	ARIES	Applicon	

FOR ADDITIONAL INFORMATION ON DESIGN TOOLS SEE DESIGN AUTOMATION SECTION

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ASIC/CUSTOM—Gate Array Design Automation Tools (Cont'd)

Array Source	Device Family	X	X	X	X	Design Tool	Source	Line	Array Source	Device Family	X	X	X	X	Design Tool	Source	Line
NEC Electronics									Sony Corporation of America								
μPB63xx ECL		x	x			HILO-VAX/SUN	GenRad		SPECL	x	x	x	x	IDEASTATION/GATESTATION	Mentor		
		x	x			IDEASTATION	Mentor										
		x	x			LOGICIAN	DAZIX										
		x	x			MACH1000	ZyCAD										
		x	x	x		NEC-ACOS	NEC							Test Vector	Checker	TI	
		x	x			SCALD	Valid	5									
μPD65xxx CMOS		x	x			DASH/CADAT-PLUS	FutureNet							CAE-2000	Tek/CAE		
		x	x			HILO-VAX/SUN	GenRad							GATESTATION	DAZIX		
		x	x	x		IDEASTATION	Mentor										
		x	x			LOGICIAN	DAZIX	10									
		x	x			MACH1000	ZyCAD										
		x	x	x		NEC-ACOS	NEC										
		x	x			SCALD	Valid										
		x	x			WORKVIEW	ViewLogic										
μPD67xxx BiCMOS		x	x			HILO-VAX/SUN	GenRad	15						Applicon	Graphics	Applicon	
		x	x			IDEASTATION	Mentor							Berkeley	SPICE	UC Berkeley	
		x	x			LOGICIAN	DAZIX										
		x	x	x		MACH1000	ZyCAD										
		x	x			NEC-ACOS	NEC	20						FutureNet	(Unicad)	Data I/O	
		x	x			SCALD	Valid							IDEEL	Autolimages		
		x	x			WORKVIEW	ViewLogic							SILOS	Simulog		
μPD67XXX BiCMOS		x	x			HILO-VAX/SUN	GenRad	25									
		x	x			IDEASTATION	Mentor										
		x	x			LOGICIAN	DAZIX										
		x	x	x		MACH 1000	ZyCAD										
		x	x			NEC-ACOS	NEC										
		x	x			SCALD	Valid										
63XX		x	x			IDEASTATION	Mentor	30									
		x	x			LOGICIAN	DAZIX										
		x	x			SCALD	Valid										
65XXX		x	x			IDEASTATION	Mentor										
		x	x			LOGICIAN	DAZIX										
		x	x			SCALD	Valid										
Performance Semiconductor Corp.																	
CMOS		x	x	x		GATEMASTER	DAZIX										
S-MOS Systems																	
SLA XXXX		x	x			BRAVO	Applicon	35									
		x	x			DASH	FutureNet										
		x	x			GATESTATION	Mentor										
		x	x	x		GDS-II	Calma										
		x	x			LOGICIAN	DAZIX										
SGS-THOMSON																	
GA-XXXX		x	x			CAE-2000	Tek/CAE	40									
		x	x			CT1000/SILOS	CaseTech										
		x	x			GATE	DESIGNER										
		x	x	x		GATESTATION	Mentor										
		x	x			HIGHLAND 2	SGS-Thomson										
		x	x			LOGICIAN	DAZIX	45									
		x	x			TEGASTATION	Calma										
GB-XXXX		x	x			TEGASTATION	Calma										
GB-XXXX		x	x			CAE-2000	Tek/CAE										
		x	x			CT1000/SILOS	CaseTech										
		x	x			GATE	DESIGNER										
		x	x	x		GATESTATION	Mentor	50									
		x	x			HIGHLAND 2	SGS-Thomson										
		x	x			LOGICIAN	DAZIX										
ISB12000		x	x			LOGIC	WORKBENCH										
ISB18000		x	x			CADAT	Cadarn	55									
		x	x			FRAMEWORK	Mentor										
		x	x			LOGICIAN	DAZIX										
		x	x			SUN 4	Mentor										
		x	x			386i	DAZIX										
ISB9000		x	x			FRAMEWORK/CONCERT	Cadence	60									

FOR ADDITIONAL INFORMATION ON DESIGN TOOLS SEE DESIGN AUTOMATION SECTION
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ASIC/CUSTOM—Linear & Linear/Digital Design Automation Tools

Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line	Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line
Custom Arrays									Micro Linear								
MM(20V)		x	x	x	x	PC-AT(W/287 + EGA)	CustomArrays		FB3600		x	x			(Cont'd)		
MM-Family		x	x	x	x	OrCAD	CustomArrays				x	x			PC WORKBENCH	AnalDesTools	
MV(40V)		x	x	x	x	PC-AT(W/287 + EGA)	CustomArrays				x	x			PERSONAL LOGICIAN	DAZIX	
MV-Family		x	x	x	x	OrCAD	CustomArrays		FB900		x	x			LINEAR CAD II	MicroLinear	
ECI Semiconductor									NEC Electronics								
BiCMOS		x				DASH	FutureNet	5	μPD41xxx	x	x		x		LOGICIAN	DAZIX	55
					x	MAGIC	FutureNet		μPD65xxx	x	x	x	x		IDEASTATION	Mentor	
BIPOLAR			x			SPICE	FutureNet		μPD65XXX	x	x	x	x		IDEASTATION	Mentor	
CMOS			x			CRYSTAL	FutureNet		μPD91XXX	x	x		x		LOGICIAN	DAZIX	
				x		MAGIC	FutureNet		μPD92xxx	x	x		x		CADNETIX		
Exar																	
LINEAR BIPOLAR								10				x		x	HILO-VAX/SUN	GenRad	60
CUSTOM		x	x	x	x	CHIPMASTER	DAZIX					x		x	MACH1000	ZyCAD	
		x	x	x	x	PROPRIETARY	Exar						x	x	NEC-ACOS	NEC	
LINEAR CMOS											x	x		x	SCALD	Valid	
CUSTOM		x	x	x	x	CHIPMASTER	DAZIX				x	x		x	WORKVIEW	ViewLogic	
		x	x	x	x	PROPRIETARY	Exar		μPD92XXX	x	x				DASH/CADAT-PLUS	FutureNet	
XR-100		x	x	x	x	GATEMASTER	DAZIX	15				x		x	HILO-VAX/SUN	GenRad	65
		x	x	x	x	PROPRIETARY	Exar					x		x	MACH 1000	ZyCAD	
XR-400		x	x	x	x	GATEMASTER	DAZIX					x		x	NEC-ACOS	NEC	
		x	x	x	x	PROPRIETARY	Exar				x	x		x	SCALD	Valid	
Gennum									SGS-THOMSON								
LA200		x	x			CADDS-2	Gennum	20	MOS	x	x				CT2000	CaseTech	70
		x	x	x	x	CHIPMASTER	DAZIX										
		x	x	x	x	CV	CompVision				x				IDEA	Mentor	
		x	x	x	x	GDS-II	Calma				x		x		MIXsim	Sierra	
		x	x			SCALD	Valid								Sierra Custom Design System	Sierra	
LA250		x	x	x	x	APPLE860	Applicon	25				x		x	MIXSIM	Sierra	75
		x	x	x	x	CHIPMASTER	DAZIX		1.5μ			x		x	MIXSIM	Sierra	
		x	x	x	x	CV	CompVision		2μ			x		x			
		x	x	x	x	GDS-II	Calma										
		x	x			SCALD	Valid										
Harris Semiconductor									United Silicon Structures								
Bipolar Analog Semicustom		x				EDGE SLICE	Cadence Harris	30	ALL	x	x	x	x		SOLO 1200	United	
BiMOS E Custom		x	x	x	x	FASTRACK	Harris										
Honeywell									Universal Semiconductor								
Bipolar Arrays		x	x	x		IDEA STATION	Mentor		US16000		x			x	DRACULA	ECAD	
International Microelectronics Products																	
ACL		x	x	x	x	SUN/SCS	SiCompilers								FutureNet (Unicad)	Data I/O	
DCL		x	x	x	x	SUN/SCS	SiCompilers								IDEEL	Autolimages	
MxCMOS		x	x	x	x	SUN/SCS	SiCompilers								PSPICE	Microsim	
LSI Logic																	
CMOS		x	x			CT2000	CaseTech	35							SILOS	Simulog	80
MOS		x	x			CT2000	CaseTech										
Micro Linear																	
BIPOLAR/ANALOG		x	x			CT2000	CaseTech	40									
FB300		x	x			ANALOG WORKBENCH	AnalDesTools										
				x		APPLE860	Applicon										
		x	x	x		CHIPMASTER	DAZIX										
		x	x			GDS-II	Calma										
		x	x			LINEAR CAD II	MicroLinear										
		x	x			LOGICIAN	DAZIX										
		x	x			PC WORKBENCH	AnalDesTools										
		x	x			PERSONAL LOGICIAN	DAZIX	45									
FB3600		x	x			ANALOG WORKBENCH	AnalDesTools	50									
				x		APPLE860	Applicon										
		x	x			GDS-II	Calma										
		x	x			LINEAR CAD II	MicroLinear										
		x	x			LOGICIAN	DAZIX										

(Continued)

FOR ADDITIONAL INFORMATION ON DESIGN TOOLS SEE DESIGN AUTOMATION SECTION
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ASIC/CUSTOM—Standard Cell Design Automation Tools

Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line	Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Extraction & Resimulation	Design Tool	Source	Line
Exar	A3000 SERIES			x	x	CAL-MP DRACULA HILO SDS	SilvarLisco ECAD GenRad SilvarLisco		Micro-Rel	CMOS 5μ DLM	x		x	x	EDGE	Cadence	(Cont'd)
Fujitsu	Std Cell(1.2μ)	x	x			GATEMASTER IDEASTATION Valid/Sun-SCALD	DAZIX Mentor Valid	5	Motorola	2μ 2 METAL	x	x	x	x	CELLSTATION LOGICIAN SCALD	Mentor DAZIX Valid	55
Harris Semiconductor	HSC	x	x	x	x	Harris Architect IDEA Series SCALD	Harris Mentor Valid	10	National Semiconductor	3μ 1 METAL	x	x		x	IDEASTATION LOGICIAN SCALD	Mentor DAZIX Valid	60
	ISC 20000	x	x	x	x	CADEXEC CAE-1 CAE-2 CELLMASTER CELLSTATION DASH TEGAS TEGASTATION	Harris PCAD PCAD DAZIX Mentor FutureNet Calma Calma	15	NCM Corporation	300XZ 7001ZX	x	x	x		ARIES ARIES	Applicon Applicon	65
Honeywell	RAD HARD STD CELLS	x	x	x	x	PROPRIETARY PROPRIETARY	Cadence Mentor	20	NCR Microelectronics	NCR 2μ 2 METAL	x	x	x	x	NCR CELLSTATION SCALD	NCR Mentor Valid	70
IC DESIGNS	2μ CMOS	x		x		DESEDT MAPCHIP/GENCHIP QSIM	IC DESIGNS IC DESIGNS IC DESIGNS	25	NEC Electronics	μPD91xxx 1.5u CMOS μPD91XXX 1.5u CMOS μPD92xxx 1.2u CMOS	x	x	x	x	IDEASTATION IDEASTATION CADNETIX DASH/CADAT-PLUS HILO-MACH1000 HILO-VAX LOGICIAN NEC-ACOS SCALD WORKVIEW	Mentor Mentor FutureNet GenRad GenRad DAZIX NEC Valid ViewLogic	75
International Microcircuits	PROPRIETARY	x	x	x	x	3.5u 1 METAL IMI		30		μPD92XXX 1.2u CMOS	x	x		x	CADNETIX DASH/CADAT-PLUS HILO-MACH 1000 HILO-VAX LOGICIAN NEC-ACOS SCALD WORKVIEW	FutureNet GenRad GenRad DAZIX NEC Valid ViewLogic	80
LSI Logic	ALL	x	x			CAE-1 CAE-2 DASH IDEAL IDEASTATION LOGICIAN MDE SCALD	PCAD PCAD FutureNet Tek/CAE Mentor DAZIX LSI Logic Valid	35	SGS-THOMSON	SA SERIES	x	x			CAE-2000 CT1000/SILOS GATE DESIGNER GATESTATION HIGHLAND 2 LOGICIAN TEGASTATION	Tek/CAE CaseTech Valid Mentor SGS-Thomson DAZIX Calma	90
Marconi Circuit Technology	3μCELLMOS	x	x	x	x	CASS/CAL-MP HILO IDEASTATION	SilvarLisco GenRad Mentor	40		SB SERIES	x	x			CAE-2000 CT1000/SILOS GATE DESIGNER GATESTATION HIGHLAND 2 LOGICIAN TEGASTATION	Tek/CAE CaseTech Valid Mentor SGS-Thomson DAZIX Calma	95
	3μCELLSOS	x	x	x	x	CASS/CAL-MP HILO IDEASTATION LOGICIAN	SilvarLisco GenRad Mentor DAZIX	45	Sierra Semiconductor	CMOS 2μ SC70000	x	x	x	x	IDEASTATION LOGICIAN MIXsim Sierra Custom Design System	Mentor DAZIX Sierra Sierra	100
Micro-Rel	Bipolar SLM		x			HSPICE	Calma MetaSoft	50									(Continued)
	BiMOS 3μ SLM BiMOS 5μ SLM CMOS 3μ DLM	x x x	x x x			SILOS SILOS IDEASTATION LOGICIAN	Simucad Simucad Mentor DAZIX										(Continued)

FOR ADDITIONAL INFORMATION ON DESIGN TOOLS SEE DESIGN AUTOMATION SECTION
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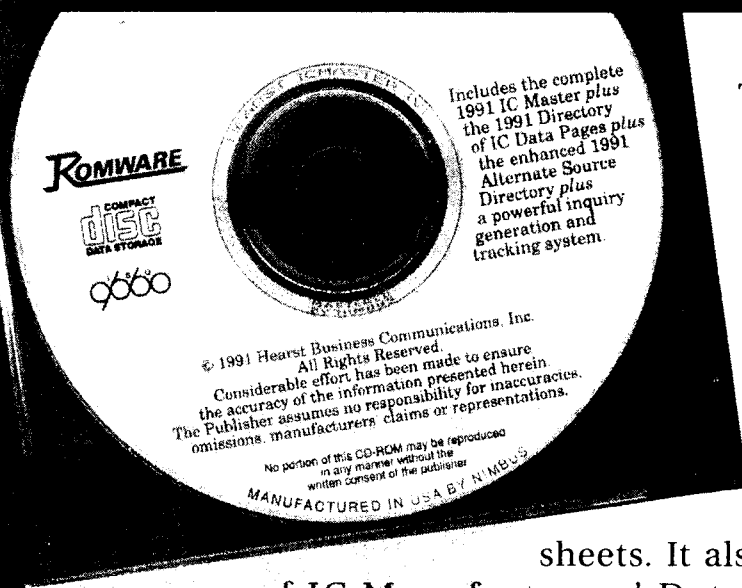
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ASIC/CUSTOM—Standard Cell Design Automation Tools (Cont'd)

Array Source	Device Family	Schematic Entry	Simulation & Timing	Place & Route	Layout Simulation & Re-simulation	Design Tool	Source	Line
(Cont'd)								
Sierra Semiconductor	SC70000	x	x	x	x	IDEASTATION	Mentor	5
		x	x	x	x	LOGICIAN	DAZIX	
		x	x	x	x	PROPRIETARY	Sierra	
	1.5μ 2 METAL		x		x	MIXSIM	Sierra	5
	2μ 2 METAL		x		x	MIXSIM	Sierra	
		x	x			PROPRIETARY	Sierra	
Standard Microsystems Corp.	CMOS Si-GATE		x			CADAT	HHB-Sys	10
				x		CAL-MP	SilvarLisco	
		x	x		x	GDS-II	Calma	
			x		x	IDEASTATION	Mentor	10
			x		x	LOGICIAN	DAZIX	
			x		x	MEGALOGICIAN	DAZIX	
		x	x		x	SCALD	Valid	15
		x	x		x	WORKVIEW	ViewLogic	
	CUSTOMATION		x			CADAT	HHB-Sys	
		x	x			CAL-MP	SilvarLisco	15
		x	x			DASH	FutureNet	
		x	x		x	DRACULA	ECAD	
		x	x		x	GDS-II	Calma	20
		x	x		x	IDEASTATION	Mentor	
		x	x		x	LOGICIAN	DAZIX	
		x	x		x	MEGALOGICIAN	DAZIX	25
		x	x		x	SCALD	Valid	
				x		TANCELL	Tangent	
					x	TANSURE	Tangent	25
		x	x		x	WORKVIEW	ViewLogic	
	1.6μ DLM CMOS	x	x		x	CELL		30
		x	x			STATION	Mentor	
		x	x		x	DASH	FutureNet	
		x	x		x	LOGICIAN	DAZIX	30
		x	x		x	SCALD	Valid	
		x	x			SYSTEM	ViewLogic	
	2μ DLM CMOS	x	x		x	CELL		35
		x	x			STATION	Mentor	
		x	x		x	DASH	FutureNet	
		x	x		x	LOGICIAN	DAZIX	35
		x	x		x	SCALD	Valid	
		x	x			SYSTEM	ViewLogic	
	3μ SLM CMOS	x	x		x	CELL		40
		x	x			STATION	Mentor	
		x	x		x	DASH	FutureNet	
		x	x		x	LOGICIAN	DAZIX	40
		x	x		x	SCALD	Valid	
		x	x			SYSTEM	ViewLogic	
Vitesse Semiconductor	VC850K	x	x			DAISY	DAZIX	45
		x	x			IDEA SYSTEM	Mentor	
		x	x			VALIDATION	Valid	
		x	x	x	x	DESIGNER	Valid	45
						VLSI	TECHNOLOGY	
						TOOLS	VLSI Tech	
Waterscale Integration	ALL	x	x			CAE-1	PCAD	50
		x	x	x	x	CASS/CAL-MP	SilvarLisco	
		x	x	x	x	CELLSTATION	Mentor	
		x	x		x	DRACULA	ECAD	50
		x	x			IDEASTATION	Mentor	
		x	x			LOGICIAN	DAZIX	
		x	x			MEGALOGICIAN	DAZIX	50
		x	x			SCALD	Valid	
				x		TANCELL	Tangent	

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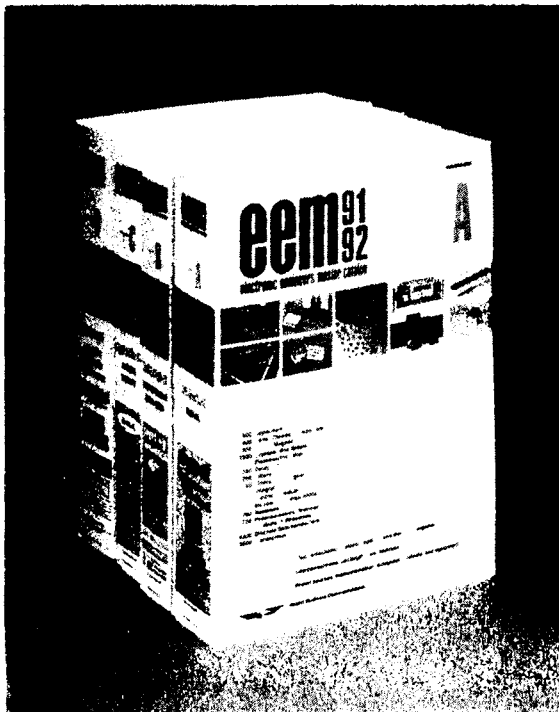
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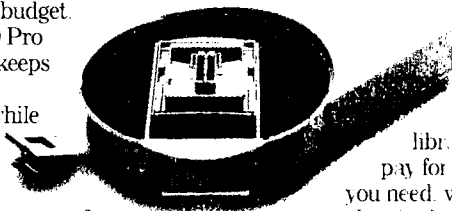
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INTRODUCTION TO PROGRAMMABLE LOGIC DEVICES

Programmable logic devices are listed by major technology families: Bipolar, CMOS, ECL, or GaAs and within them by functional groups in the following order according to output configuration:

COMBINATORIAL OUTPUTS

- One-Time Programmable – Combinatorial Outputs
- Erasable Programmable – Combinatorial Outputs
- Electrically Erasable Programmable –
Combinatorial Outputs

REGISTERED OUTPUTS

- One-Time Programmable – Registered Outputs
- Erasable Programmable – Registered Outputs
- Electrically Erasable Programmable –
Registered Outputs

REGISTERED/COMBINATORIAL OUTPUTS

- One-Time Programmable–
Registered/Combinatorial Outputs
- Erasable Programmable–
Registered/Combinatorial Outputs
- Electrically Erasable Programmable – Registered/
Combinatorial Outputs

SUPERSET

- One-Time Programmable – Superset
- Erasable Programmable – Superset
- Electrically Erasable Programmable – Superset

The Superset devices typically have programmable I/O Macrocells that allow one Superset device to replace many different conventional programmable logic devices.

Within each of the above categories devices are listed in order of performance.

At the end of this directory, the Programmable Logic Design Automation Tools section provides a listing of PLD development systems.

PROGRAMMABLE LOGIC DEVICES—Bipolar

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Combinatorial Outputs												
5	16	—	10	2	6	—	180	24	Field Programmable High Speed decoder, 16 inputs, 8 outputs	PHD16N8-5	♦*† Signetics (3661)	5
	64	—	10	2	6	—	180	20		TIBPAL16L8-5	♦° TI	
		—		8		—	180	180		PAL16L8-5	♦° AMD	
		—	14	2	6	—	210	24		TIBPAL20L8-5	♦° TI	
6	8	—	10		8	—	180	20		TIBPAD18N8-6	♦° TI	
7	16	—	10		8	—	180	20		TIBPAD16N8-7	♦° TI	10
7.5	56	—	10	2	6	—	180	20	Field Programmable Array Logic, 16 inputs, 8 outputs	PAL16L8-7	° AMD	
	64	—	10	2	6	—	180	20		PLUS16L8-7	♦*† Signetics	
		—	14	2	6	—	210	24	Field Programmable Array Logic, 20 inputs, 8 outputs	PLUS20L8-7	♦*† Signetics	
		—		8		—	210	210		PAL20L8-7	♦° AMD	
7.7	73	0	36	10	12	420	—	68	Programmable High Speed Decoder	PHD48N22-7	Signetics	15
10	56	—	10	2	6	—	180	20		PAL16L8D	° AMD	
		—	14	2	6	—	210	24		PAL20L8-10	° AMD	
	64	—	9	2	6	—	180	20	Field Programmable Array Logic, 16 inputs, 8 outputs	PAL16L8D	♦*† National	
		—	10	2	6	—	180	20		PLUS16L8D	♦*† Signetics	
		—	14	2	6	—	210	24	Field Programmable Array Logic, 20 inputs, 8 outputs	PLUS20L8D	♦*† Signetics	20
12	42	—	8	—	10	—	200	20	Field Programmable Logic Array, 18 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLUS153D	♦*† Signetics	
		—	12	—	10	—	200	24	Field Programmable Logic Array, 20 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLUS173D	♦*† Signetics	
15	40	—	10	10		—	105	105		AMPAL20L10B	♦° AMD	
	42	—	8	—	10	—	200	20	Field Programmable Logic Array, 18 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLUS153B	♦*† Signetics	
		—	12	—	10	—	200	24	Field Programmable Logic Array, 20 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLUS173B	♦*† Signetics	25
	56	—	10	2	6	—	180	20		PAL16L8B	° AMD	
		—	14	2	6	—	210	24		PAL20L8B	° AMD	
	64	—	9	2	6	—	180	20	Field Programmable Logic Array, 18 inputs, 8 8-input OR gates, 8 I/O with Polarity Control	PAL16L8B	♦*† National	
		—	10	—	8	—	155	20		PLHS18P8B	♦*† Signetics	
		—		2	6	—	155	20	Field Programmable Array Logic, 16 inputs, 8 outputs	PLHS16L8B	♦*† Signetics	30
		—	14	2	4	—	210	24		PAL20L8B	♦*† National	
		—								PAL20P8B	♦† National	
20	64	—	10	—	8	—	155	20	Field Programmable Logic Array, 18 inputs, 8 8-input OR gates, 8 I/O with Polarity Control	PLHS18P8A	♦*† Signetics	
		—		2	6	—	155	20	Field Programmable Array Logic, 16 inputs, 8 outputs	PLHS16L8A	♦*† Signetics	
22	24	—	11	2	9	—	155	24	Field Programmable Logic Array, 20 inputs, 22 24-input OR gates, 11 outputs with Polarity Control	PLHS473	♦*† Signetics	35
25	7	—	14	2	6	—	210	24		PAL20L8A	° AMD	
	16	—	10	8	—	—	90	20		PAL10H8A	♦† National	
		—								PAL10L8A	♦† National	
		—	12	6	—	—	90	20		PAL12H6A	♦† National	
		—								PAL12L6A	♦† National	

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

♦ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Combinatorial Outputs											(Cont'd)	
25	16	—	14	4	—	—	90	20		PAL14H4A † † National PAL14L4A † † National	(Cont'd)	5
			16	2	—	—	90	20		PAL16H2A † † National PAL16L2A † † National		
			20	2	—	—	100	24		PAL20C1A † † National PAL20L2A † † National		
	20	—	12	10	—	—	100	24		PAL12L10A † † National		10
			14	8	—	—	100	24		PAL14L8A † † National		
			16	6	—	—	100	24		PAL16L6A † † National		
			18	4	—	—	100	24		PAL18L4A † † National		
	40	—	10	10	—	105	105	24		AMPAL20L10AL	* AMD	15
	56	—	10	2	6	—	90	20		PAL16L8B-2		
			14	2	6	—	105	20		PAL20L8B-2		
	64	—	9	2	6	—	90	20		PAL16L8B2 † † National	† † National	20
			14	2	4	—	210	24		PAL20L8A † † National		
16			1	—	—	90	20		PAL16C1A † † National			
30	32	0	8	0	10	155	—	20		PLS153A	* AMD * Signetics	25
	40	—	10	—	10	—	165	24	Functionally enhanced. XOR gates. 10 outputs.	PAL20L10A		
			12	2	8	—	165	24		PAL20L10A † † National		
	42	—	12	—	10	—	170	24	Field Programmable Logic Array, 20 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLS173 † † Signetics		
	35	16	—	10	8	—	—	45	20			
90								20		PAL10H8 † † National PAL10L8 † † National		
45								20		PAL12H6A2 † † National PAL12L6A2 † † National		
12				6	—	—	90	20		PAL12H6 † † National PAL12L6 † † National		35
							45	20		PAL14H4A2 † † National PAL14L4A2 † † National		
							90	20		PAL14H4 † † National PAL14L4 † † National		
16		—	16	1	—	—	90	20		PAL16C1 † † National		40
							45	20		PAL16H2A2 † † National PAL16L2A2 † † National		
							90	20		PAL16H2 † † National PAL16L2 † † National		
24		0	11	2	9	155	—	24		PLHS473S	* AMD * Signetics	45
							55	20		PAL16L8B-4		
56		—	10	2	6	—	90	20		PAL16L8A-2	* AMD	50
							105	24		PAL20L8A-2		
64		—	9	2	6	—	90	20		PAL16L8A2 † † National PAL16L8 † † National	† † National	
							180	20				
40	16	—	16	1	—	—	45	20		PAL16C1A2 † † National		55
			20	2	—	—	100	24		PAL20C1 † † National PAL20L2 † † National		
	20	—	12	10	—	—	100	24		PAL12L10 † † National		50
			14	8	—	—	100	24		PAL14L8 † † National		
			16	6	—	—	100	24		PAL16L6 † † National		
			18	4	—	—	100	24		PAL18L4 † † National		
	42	—	8	—	10	—	155	20	Field Programmable Logic Array, 18 inputs, 10 32-input OR gates, 10 I/O with Polarity Control	PLS153 † † Signetics		
50	40	—	12	2	8	—	165	24		PAL20L10 † † National		
	48	—	16	8	—	—	170	28	Field Programmable Logic Array, 16 inputs, 8 48-input OR gates, 8 outputs with Polarity Control	PLS100 † † Signetics		55

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Erased Programmable—Combinatorial Outputs												
12	64	10	29	24	24			20		PML2552	Signetics	

PROGRAMMABLE LOGIC

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ♦Available in Surface Mount Package
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PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Clock Frequency (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered Outputs Only												
100	32 x 18	—	3	12	—	—	425	24	Memory/instruction-based sequencers. Frequency-multiplying phase-locked loop.	AM2971A	* AMD	5
74	64	8	8	8	—	—	180	20	Field Programmable Array Logic, 16 inputs, 8 registered outputs	PAL16R8-7	* AMD	
							180	20		PLUS16R8-7	o*† Signetics	
							210	24	Field Programmable Array Logic, 20 inputs, 8 registered outputs	PLUS20R8-7	o*† Signetics	
71	64	8	8	8	—	—	—	20		PAL16R8D	o* National	
60.6	64	8	8	8	—	—	180	20	Field Programmable Array Logic, 16 inputs, 8 registered outputs	PLUS16R8D	o*† Signetics	10
							210	24	Field Programmable Array Logic, 20 inputs, 8 registered outputs	PLUS20R8D	o*† Signetics	
							—	20		PAL16R8D	* AMD	
58.8	64	—	8	8	—	—	180	20		PAL16R8D	* AMD	
56	64	8	8	8	0	220	—	20	Programmable Logic Array	TIBPAL16R8-12M	o*‡ TI	
55.5	56	—	12	8	—	—	210	24		PAL20R8-10	* AMD	15
55	48	14	16	8	—	—	200	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 48 transition terms, 8 registered outputs	PLUS105-55	o*† Signetics	
							225	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 64 transition terms, 2 clocks, 8 registered outputs	PLUS405-55	o*† Signetics (3664)	
							—	20		PAL16R8B	o*† National	
50	64	8	8	8	0	220	—	20	Programmable Logic Array	TIBPAL16R8-15M	o*† TI	
45	64	16	15	8	—	—	225	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 64 transition terms, 2 clocks, 8 registered outputs	PLUS405-45	o*† Signetics (3664)	
							180	24	Programmable Logic Array	TIBPAL16R8-20M	o*† TI	20
							180	24		TIBPAL20R8-20M	o*† TI	
40	48	—	16	8	—	—	200	28	Programmable logic sequencer. PLA structure, complement array.	PLS105-40	* AMD	
							200	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 48 transition terms, 8 registered outputs	PLUS105-40	o*† Signetics	
							—	20		PAL16R8B2	o† National	
37	64	—	8	8	—	—	180	20		PAL16R8B	* AMD	30
							210	24		PAL20R8B	* AMD	
							225	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 64 transition terms, 2 clocks, 8 registered outputs	PLUS405-37	o*† Signetics (3664)	
33.3	64	8	8	8	—	—	—	20		PAL16R8A	o*† National	
33	48	—	12	4	—	—	160	24	Programmable logic sequencer. PLA structure, complement array.	PLS168-33	* AMD	25
							160	24	Programmable logic sequencer. PLA structure, complement array.	PLS167-33	* AMD	
							—	20		PAL16R8B-2	* AMD	
25	64	—	8	8	—	—	90	20		PAL16R8A	* AMD	
							180	20		PAL16R8A	* AMD	
							105	24		PAL20R8B-2	* AMD	
							210	24		PAL20R8A	* AMD	
							170	20		PAL16R8A	o*† National	
			8	8	8	0	105	20	Programmable Logic Array	TIBPAL16R8-30M	o*† TI	30
							180	20	Programmable Logic Array	PAL16R8AM	o*† TI	
							—	20				
			8	8	8	0	105	20	Programmable Logic Array	TIBPAL16R8-30M	o*† TI	
							180	20	Programmable Logic Array	PAL16R8AM	o*† TI	
							—	20				

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

o Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Clock Frequency (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bi-dirrec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered Outputs Only											(Cont'd)	
25	80	10	10	—	10	—	200	24		PAL20RA10	(Cont'd)	
	120		12	0	10	225		24	Programmable Logic Array	TiBPAL22VP10.25M	† National † TI	
22.2	40	—	10	10	—	—	180	28	Functionally enhanced XOR gates, 10 outputs	PAL20X10A	* AMD	
22	120		12	0	10	180		24	Programmable Logic Array	TiBPAL220V10AM	† TI	
20	48	12	14	6	—	—	180	24	Field Programmable Logic Sequencer (Mealy type), 14 inputs, 48 transition terms, 6 registered outputs	PLS167A	† Signetics	5
		14	12	8	—	—	180	24	Field Programmable Logic Sequencer (Mealy type), 12 inputs, 48 transition terms, 8 registered outputs	PLS168A	† Signetics	
			16	8	—	—	180	28	Field Programmable Logic Sequencer (Mealy type), 16 inputs, 48 transition terms, 8 registered outputs	PLS105A	† Signetics	
	64	8	8	8	—	—	—	20		PAL16R8	† National	
										PAL16R8A2	† National	
16	64	—	8	8	—	—	55	20		PAL16R8B-4	* AMD	10
							90	20		PAL16R8A-2	* AMD	
			12	8	—	—	105	24		PAL20R8A-2	* AMD	
		8	8	8	0	90		20	Programmable Logic Array	PAL16R8A-2M	† TI	
13.9	48	12	14	6	—	—	180	24	Field Programmable Logic Sequencer (Mealy Type), 14 inputs, 48 transition terms, 6 registered outputs	PLS167	† Signetics	
		14	12	8	—	—	180	24	Field Programmable Logic Sequencer (Mealy type), 14 inputs, 48 transition terms, 6 registered outputs	PLS168	† Signetics	15
			16	8	—	—	180	28	Field Programmable Logic Sequencer (Mealy Type), 16 inputs, 48 transition terms, 8 registered outputs	PLS105	† Signetics	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidir- ec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs													
4.5	125	32	8	8	6	4	180	28			PAL16R4-4	◊ AMD	
		48	8	8	6	2	180	28			PAL16R6-4	◊ AMD	
		56	10	8	8	6	80	28			PAL16L8-4	◊ AMD	
5	111	64	4	8			180	180	20		PAL16R4-5	◊* AMD	5
			6	8			180	180	20		PAL16R6-5	◊* AMD	
			8	8			180	180	20		PAL16R8-5	◊ AMD	
	117	32		12	4	4	210	28			PAL20R4-5	◊ AMD	10
		48		12	6	2	210	28			PAL20R6-5	◊ AMD	
		56		14	8	6	210	28			PAL20L8-5	◊ AMD	
		64		12	8		210	28			PAL20R8-5	◊ AMD	
7	100	64	—	14	2	6	—	210	24		TIBPAL20L8-7C	◊* TI	
			4	12	4	4	—	210	24		TIBPAL20R4-7C	◊* TI	
			6	12	6	2	—	210	24		TIBPAL20R6-7C	◊* TI	
			8	12	8	—	—	210	24		TIBPAL20R8-7C	◊* TI	
												◊* TI	
7.5	—	64	—	10	2	6	—	200	20		TIBPAL16L8-7	◊*† TI	15
				14	2	6	—	210	24		TIBPAL20L8-7	◊*† TI	
	45	64	4	12	4	4	—	210	24		TIBPAL20R4-7	◊*† TI	20
			6	12	6	2	—	210	24		TIBPAL20R6-7	◊*† TI	
			8	12	8	—	—	210	24		TIBPAL20R8-7	◊*† TI	
												◊*† TI	
	74	64	—	8	4	4	—	180	20		PAL16R4-7	◊ AMD	25
					6	2	—	180	20		PAL16R6-7	◊ AMD	
			4	8	4	4	—	180	20	Field Programmable Array Logic	PLUS16R4-7	◊*† Signetics	30
				12			210	210	24	Field Programmable Array Logic	PAL20R4-7	◊* AMD	
					4	4	—	210	24		PLUS20R4-7	◊*† Signetics	
			6	8	6	2	—	180	20	Field Programmable Array Logic	PLUS16R6-7	◊*† Signetics	
				12			210	210	24		PAL20R6-7	◊* AMD	35
			8	12			210	210	24		PAL20R8-7	◊* AMD	
	100	64	—	10	2	6	—	220	20		TIBPAL16L8-7C	◊* TI	
			4	8	4	4	—	200	20		TIBPAL16R4-7	◊*† TI	
								220	20		TIBPAL16R4-7C	◊* TI	40
			6	8	6	2	—	200	20		TIBPAL16R6-7	◊*† TI	
								220	20		TIBPAL16R6-7C	◊* TI	
			8	8	8	—	—	200	20		TIBPAL16R8-7	◊*† TI	
								220	20		TIBPAL16R8-7C	◊* TI	45
												◊* TI	
10	—	64	—	10	2	6	—	200	20		TIBPAL16L8-10	◊*† TI	
	50	97	24	12	8	—	—	210	24	16 internal S/R registers	TIBPLS506	◊*† TI	
											TIBPLS506C	◊* TI	45
	55.5	64	—	12	4	4	—	210	24		PAL20R4-10	◊ AMD	
					6	2	—	210	24		PAL20R6-10	◊ AMD	
	58	80	16	12	8	—	—	210	24	6-bit on-chip counter	TIBPSG507C	◊* TI	45
											TIBPSG507M	◊*† TI	
	58.8	64	—	8	4	4	—	180	20		PAL16R4D	◊ AMD	
					6	2	—	180	20		PAL16R6D	◊ AMD	
	60.6	64	4	8	4	4	—	180	20	Field Programmable Array Logic	PLUS16R4D	◊*† Signetics	45
				12	4	4	—	210	24	Field Programmable Array Logic	PLUS20R4D	◊*† Signetics	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line	
One-Time Programmable—Registered/Combinatorial Outputs											(Cont'd)			
10	60.6	64		6	8	6	2	—	180	20	Field Programmable Array Logic	PLUS16R6D	(Cont'd)	5
					12	6	2	—	210	24	Field Programmable Array Logic	PLUS20R6D	°† Signetics	
												°† Signetics		
71	64		4	8	4	4	—	180	20		PAL16R4D	°† National		
			6	8	6	2	—	180	20		PAL16R6D	°† National		
		132	10	12		10	180	180	24		PAL22V10-10	°† AMD	10	
71.4	64		—	10	2	6	—	220	20		TIBPAL16L8-10M	°† TI		
				14	2	6	—	210	24		TIBPAL20L8-10C	°° TI		
											TIBPAL20L8-10M	°† TI		
			4	8	4	4	—	220	20		TIBPAL16R4-10M	°† TI		
				12	4	4	—	210	24		TIBPAL20R4-10C	°° TI		
											TIBPAL20R4-10M	°† TI		
			6	8	6	2	—	220	20		TIBPAL16R6-10M	°† TI		
				12	6	2	—	210	24		TIBPAL20R6-10C	°° TI		
											TIBPAL20R6-10M	°† TI		
			8	8	8	—	—	220	20		TIBPAL16R8-10M	°† TI	15	
				12	8	—	—	210	24		TIBPAL20R8-10C	°° TI		
85	64		4	8	4	4	—	200	20		TIBPAL16R4-10	°† TI		
			6	8	6	2	—	200	20		TIBPAL16R6-10	°† TI		
			8	8	8	—	—	200	20		TIBPAL16R8-10	°† TI		
12	52.6	64		—	14	2	6	—	210	24		TIBPAL20L8-12M	°† TI	20
			4		12	4	4	—	210	24		TIBPAL20R4-12M	°† TI	
			6		12	6	2	—	210	24		TIBPAL20R6-12M	°† TI	
												°† TI		
56	64		0	10	2	6		220	20	Programmable Logic Array	TIBPAL16L8-12M	°† TI	25	
			4	8	4	4		220	20	Programmable Logic Array	TIBPAL16R4-12M	°† TI		
			6	8	6	2		220	20	Programmable Logic Array	TIBPAL16R6-12M	°† TI		
												°† TI		
												°† TI		
15	—	64		—	14	2	6	—	180	24		TIBPAL20L8-15	°† TI	30
37	64			8	4	4	—	180	20		PAL16R4B	° AMD		
					6	2	—	180	20		PAL16R6B	° AMD		
				12	4	4	—	210	24		PAL20R4B	° AMD		
					6	2	—	210	24		PAL20R6B	° AMD		
50	48		12	14	6	—	—	160	24		TIB82S167B	°† TI	35	
			14	16	8	—	—	180	28		TIB82S105B	°† TI		
												°† TI		
		64		—	10	2	6	—	180	20		TIBPAL16L8-15		°† TI
			0	10	2	6		220	20	Programmable Logic Array	TIBPAL16L8-15M	°† TI		
			4	8	4	4	—	180	20		PAL16R4B	°† National	35	
											TIBPAL16R4-15	°† TI		
									220	20	Programmable Logic Array	TIBPAL16R4-15M	°† TI	
(Continued)														

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propagation Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedicated Inputs	Dedicated Outputs	Bidirectional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/ Combinatorial Outputs													(Cont'd)
15	50	64	4	12	4	4	—	180	24	Asynchronous PAL. Programmable clock.	TIBPAL20R4-15 ♦† TI	(Cont'd)	5
								210	24		PAL20RP4B ♦ National PAL20R4B ♦ National		
			6	8	6	2	—	180	20		PAL16R6B ♦† National TIBPAL16R6-15 ♦† TI		
								220	20		Programmable Logic Array TIBPAL16R6-15M ♦† TI		
				12	6	2	—	180	24		TIBPAL20R6-15 ♦† TI		
								210	24		PAL20R6B ♦ National		
			8	8	8	—	—	180	20		TIBPAL16R8-15 ♦† TI		
				12	8	—	—	180	24		TIBPAL20R8-15 ♦ TI		
								210	24		PAL20RP6B ♦ National PAL20RP8B ♦ National PAL20R8B ♦ National		
20	30	40	—	10	—	10 macrocells	—	210	24	Sequencer PAL. 6 buried flip-flops.	PAL20RA10-20 ♦ AMD		15
	33.3	48-96	—	9	4	4 macrocells	—	210	20		AMPAL23S8-20 ♦ AMD		
	35	65	10	10	10	—	—	180	24		TIBPAL20X10-20 ♦† TI		
		76	—	12	2	8	—	165	24		TIBPAL20L10-20 ♦† TI		
			4	10	4	6	—	180	24		TIBPAL20X4-20 ♦† TI		
			8	10	8	2	—	180	24		TIBPAL20X8-20 ♦† TI		
	41.5	64	6	12	6	2	—	210	24		TIBPAL20R6-20M ♦† TI		
	41.6	64	0	10	2	6		190	20		Programmable Logic Array TIBPAL16L8-20M ♦† TI		
				14	2	6		180	24		Programmable Logic Array TIBPAL20L8-20M ♦† TI		
			4	8	4	4		190	20		Programmable Logic Array TIBPAL16R4-20M ♦† TI		
				12	4	4		180	24		Programmable Logic Array TIBPAL20R4-20M ♦† TI		
			6	8	6	2		190	20		Programmable Logic Array TIBPAL16R6-20M ♦† TI		
25	—	54	—	16	—	6 macrocells	—	210	24	Asynchronous PAL. Edge activated flip-flops. 48-64 mA IOL.	PAL22IP6-25 AMD		25
		64	—	14	2	6	—	105	24		TIBPAL20L8-25 ♦† TI		
	25	48-96	—	9	4	4 macrocells	—	210	20		Sequencer PAL. 6 buried flip-flops. AMPAL23S8-25 ♦ AMD		
		64	—	8	4	4	—	90	20		PAL16R4B-2 ♦ AMD		
								180	20		PAL16R4A ♦ AMD		
					6	2	—	90	20		PAL16R6B-2 ♦ AMD		
								180	20		PAL16R6A ♦ AMD		
				12	4	4	—	105	24		PAL20R4B-2 ♦ AMD		
								210	24		PAL20R4A ♦ AMD		
					6	2	—	105	24		PAL20R6B-2 ♦ AMD		
								210	24		PAL20R6A ♦ AMD		
		80-160	—	12	—	10 macrocells	—	180	24	Sequencer PAL. Buried flip-flops. J-K flip-flops.	PAL32VX10A ♦ AMD	(Continued)	35

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

♦ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs (Cont'd)													
25	33	64	4	12	4	4	—	105	24		TIBPAL20R4-25 *† TI	(Cont'd)	
			6	12	6	2	—	105	24		TIBPAL20R6-25 *† TI		
			8	12	8	—	—	105	24		TIBPAL20R8-25 *† TI		
	33.3	64	4	8	4	4	—	180	20		PAL16R4A *† National		5
				12	4	4	—	210	24		PAL20R4A *† National		
			6	8	6	2	—	180	20		PAL16R6A *† National		
				12	6	2	—	210	24		PAL20R6A *† National		
			8	12	8	—	—	210	24		PAL20R8A *† National		
	40	64	4	8	4	4	—	100	20		PAL16R4B2 *† National		10
			6	8	6	2	—	100	20		PAL16R6B2 *† National		
	50	64	—	10	2	6	—	100	20		16L8-25 TIBPAL16L8-25 *† TI	Micro-C	
			4	8	4	4	—	100	20		TIBPAL16R4-25 *† TI		15
			6	8	6	2	—	100	20		TIBPAL16R6-25 *† TI		
			8	8	8	—	—	100	20		TIBPAL16R8-25 *† TI		
30	20	40	—	10	—	10 macrocells	—	210	24	Asynchronous PAL. Programmable clock.	PAL20R10 * AMD		
	22	76	—	12	2	8	—	165	24		TIBPAL20L10-30 *† TI		
			4	10	4	6	—	180	24		TIBPAL20X4-30 *† TI		
			8	10	8	2	—	180	24		TIBPAL20X8-30 *† TI		
			10	10	10	—	—	180	24		TIBPAL20X10-30 *† TI		20
	22.2	40	—	10	4	6	—	180	28	Functionally enhanced. XOR gates 10 outputs.	PAL20X4A * AMD		
					8	2	—	180	28	Functionally enhanced. XOR gates 10 outputs.	PAL20X8A * AMD		
	80-160	—	12	—	—	10 macrocells	—	180	24	Sequencer PAL. Buried flip-flops. J-K flip-flops.	PAL32VX10 * AMD		
	25	40	4	10	4	6	—	180	24		PAL20X4A *† National		25
			8	10	8	2	—	180	24		PAL20X8A *† National		
			10	10	10	—	—	180	24		PAL20X10A *† National		
	64	0	10	2	6	—	—	105	20	Programmable Logic Array	TIBPAL16L8-30M *† TI		
								180	20	Programmable Logic Array	PAL16L8AM *† TI		
			4	8	4	4	—	105	20	Programmable Logic Array	TIBPAL16R4-30M *† TI		30
								180	20	Programmable Logic Array	PAL16R4AM *† TI		
			6	8	6	2	—	105	20	Programmable Logic Array	TIBPAL16R6-30M *† TI		
								180	20	Programmable Logic Array	PAL16R6AM *† TI		
	35	32	—	8	—	8 macrocells	—	170	20	Asynchronous PAL. Programmable clock.	PAL16R8A * AMD		
35	16	64	—	8	4	4	—	55	20		PAL16R4B-4 * AMD		35
								90	20		PAL16R4A-2 * AMD		
					6	2	—	55	20		PAL16R6B-4 * AMD		
								90	20		PAL16R6A-2 * AMD		
			12	4	4	—	—	105	24		PAL20R4A-2 * AMD		
				6	2	—	—	105	24		PAL20R6A-2 * AMD		

(Continued)

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

* Behavioral Model Available

* Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—Bipolar (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs											(Cont'd)		
35	18	43	48	4	—	12	—	190	20	Field Programmable Logic Sequencer, 16 inputs, 33 transition terms, 8 registered I/O, 4 I/O with Polarity	PLS159A	◊° Signetics	(Cont'd)
	20	64	4	8	4	4	—	90 180	20 20		PAL16R4A2	◊† National	5
			6	8	6	2	—	90 180	20 20		PAL16R6A2	◊† National	
											PAL16R6	◊† National	
40	16	64	0	10	2	6		90	20	Programmable Logic Array	PAL16L8A-2M	◊°† TI	10
			4	8	4	4		90	20	Programmable Logic Array	PAL16R4A-2M	◊°† TI	
			6	8	6	2		90	20	Programmable Logic Array	PAL16R6A-2M	◊°† TI	
	22.2	64	12	12-17		8-12	225	225	28		PLS30S16-40	◊° AMD	15
45	125	64		8	8			180	28		PAL16R8-4	◊° AMD	
50	14	43	4	4	—	12	—	190	20	Field Programmable Logic Sequencer, 16 inputs, 33 transition terms, 4 registered I/O, 8 I/O with Polarity	PLS155	◊° Signetics	
			6	4	—	12	—	190	20	Field Programmable Logic Sequencer, 16 inputs, 33 transition terms, 6 registered I/O, 6 I/O with Polarity	PLS157	◊° Signetics	20
	16.7	40	4	10	4	6	—	180	24		PAL20X4	◊† National	
			8	10	8	2	—	180	24		PAL20X8	◊† National	
			10	10	10	—	—	180	24		PAL20X10	◊† National	
One-Time Programmable—Superset													
15	—	64	—	10	—	8	—	180	20	Polarity	AMPAL18P8B	◊° AMD	25
		80	—	12	—	8	—	180	24	Polarity	AMPAL22P10B	◊° AMD	
	50	96-192	—	12	—	8-16	—	180	24	Varied term distribution	PAL22V10-15	◊° AMD	
		120	10	12	10	10	—	180	24	Macrocell	TIBPAL22V10-15C	◊° TI	
20	35	120	10	12	10	10	—	180	24	Macrocell	TIBPAL22V10-20M	◊°† TI	30
	37	120	10	12	10	10	—	210	24	Enhanced macrocell	TIBPAL22VP10-20	◊°† TI	
25	—	64	—	10	—	8	—	90 180	20 20	Polarity Polarity	AMPAL18P8AL	◊° AMD	35
		80	—	12	—	10	—	90	24	Polarity	AMPAL18P8A	◊° AMD	
								180	24	Polarity	AMPAL22P10AL	◊° AMD	
	28	120	10	12	10	10	—	180	24	Macrocell	AMPAL22P10A	◊° AMD	
	28.5	96-192	—	12	—	10	—	180	24	Varied term distribution	TIBPAL22V10A	◊°† TI	40
											AMPAL22V10A	◊° AMD	
35	—	64	—	10	—	8	—	90	20	Polarity	AMPAL18P8L	◊° AMD	
	18	96-192	—	12	—	10	—	180	24	Varied term distribution	AMPAL22V10	◊° AMD	
		120	10	12	10	10	—	180	24	Macrocell	TIBPAL22V10	◊°† TI	45
											TIBPAL22V10C	◊° TI	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—BICMOS

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Combinatorial Outputs												
5	64		10		6		180	20		PAL16L8B-5	◊ Aspen	
7.5	64		10		6		180	20		PAL16L8B-7	◊† Aspen	

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value *Behavioral Model Available ◊ Available in Surface Mount Package
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PROGRAMMABLE LOGIC

PROGRAMMABLE LOGIC DEVICES—BiCMOS (Cont'd)

Max Clock Frequency (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional i/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered Outputs Only												
117	64	4	8	4	4		80	20		PAL16R4B-5	◊ Aspen	5
		6	8	6	2		180	20		PAL16R6B-5	◊ Aspen	
		8	8	8			180	20		PAL16R8B-5	◊ Aspen	
74	64	4	8	4	4		180	20		PAL16R4B-7	◊† Aspen	5
		6	8	6	2		180	20		PAL16R6B-7	◊† Aspen	
		8	8	8			180	20		PAL16R8B-7	◊† Aspen	
One-Time Programmable—Superset												
7.5	111	132	10	12		10		190	24	PAL22VP10C-7	◊ Aspen	10
										PAL22V10C-7	◊ Aspen	
10	90	132	10	12		10		190	24	PAL22VP10C-10	◊† Aspen	
										PAL22V10C-10	◊† Aspen	
12	71	132	10	12		10		190	24	PAL22VP10C-12	◊† Aspen	
										PAL22V10C-12	◊† Aspen	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—CMOS

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Combinatorial Outputs												
35	74	10	18	8	8			20		PLC18V8Z35	Signetics	
40	74	10	18	8	8			20		PLC18V8ZI * Signetics (3663)		
Erasable Programmable—Combinatorial Outputs												
8			8	10			200	28	Ultra High-Speed State Machine EPLD	CY7C361-125C	◊ Cypress	
10			8	10			150	28	Ultra High-Speed State Machine EPLD	CY7C361-100C	◊ Cypress	
							200	28	Ultra High-Speed State Machine EPLD	CY7C361-100M	◊ Cypress	5
12			8	10			150	28	Ultra High-Speed State Machine EPLD	CY7C361-83C	◊ Cypress	
										CY7C361-83M	◊† Cypress	
15			8	10			150	28	Ultra High-Speed State Machine EPLD	CY7C361-66C	◊ Cypress	
										CY7C361-66M	◊† Cypress	
20	40 64	—	10 8	2	6 16	— 200	70 150	20 28	32-Macrocell Max EPLD	PALC16L8-20M	◊ Cypress	10
										CY7C344-20C	◊ Cypress	
25	64		8		16	200 220	150 170	28 28	32-Macrocell Max EPLD 32-Macrocell Max EPLD	CY7C344-25C	◊ Cypress	
										CY7C344-25M	◊† Cypress	
		—	10	2	6	—	70	20		PALC16L8-25C	◊ Cypress	
30	64 128 256	—	10 8 8	2	6 28 52	— 155 200	70 100 310	20 44 68	64-Macrocell Max EPLD 128-Macrocell Max EPLD	PALC16L8-30M	◊ Cypress	15
										CY7C343-30C	◊ Cypress	
										CY7C342-30C ◊ Cypress (3436)		
35	64		8		16	220	170	28	32-Macrocell Max EPLD	CY7C344-35M		
		—	10	2	6	—	70	20		◊† Cypress		
										PALC16L8-35C	◊ Cypress	
	128		8		28	155 160	100 120	44 44	64-Macrocell Max EPLD 64-Macrocell Max EPLD	CY7C343-35C	◊ Cypress	20
										CY7C343-35M	◊† Cypress	
	256		8		52	200	310	68	128-Macrocell Max EPLD	CY7C342-35C ◊ Cypress (3436)		
						240	320	68	128-Macrocell Max EPLD	CY7C342-35M ◊† Cypress (3436)		
40	64 128	—	10 8	2	6 28	— 160	70 120	20 44	64-Macrocell Max EPLD	PALC16L8-40M	◊ Cypress	25
										◊† Cypress		
	256		8		52	200	310	68	128-Macrocell Max EPLD	CY7C342-40C ◊ Cypress (3436)		
						240	320	68	128-Macrocell Max EPLD	CY7C342-40M	◊† Cypress	
Electrically Erasable Programmable—Combinatorial Outputs												
15	42	—	12	—	10	60	60mA + 0.5mA/MHz					
							24		FPLA prog AND/ prog OR. Prog polarity	PEEL173-15 ICT (3545)		
										PEEL273-15 ICT (3545)		
						65	98	24	10 Sum Terms PLS 173 Replacement	PEEL173-15 ◊ Gould AMI (3499)		30
									20 Sum Terms PLS173 Superset	PEEL273-15 ◊ Gould AMI (3499)		
30	42	—	8	—	10	65	82	20	10 sum terms. PLS153 replacement.	PEEL153 Gould AMI (3499)		
									20 sum terms. PLS153 superset.	PEEL253 Gould AMI (3499)		
			12	—	10	35	35mA + 1mA/MHz					
							24		FPLA prog AND/ prog OR. Prog polarity	PEEL173-30 ICT (3545)		35
										PEEL273-30 ICT (3545)		
						65	82	24	10 sum terms. PLS173 replacement.	PEEL173 Gould AMI		
									20 sum terms. PLS173 superset.	PEEL273 Gould AMI		
Erasable Programmable—Registered Outputs Only												
30	64 x 32	—	8	16	—	—	115	28	Memory/instruction-based sequencer. Instruction-based with counter and stack.	AM29CPL151H-30	AMD	
28 6	64	8	8	8	—	—	70	20		PALC16R8-25C	◊ Cypress	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Clock Frequency (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Erased Programmable—Registered Outputs Only											(Cont'd)	
28.5	64	8	8	8	—	—	70	20		PALC16R8-20M	Cypress	
27	192	12	31	12	12	130	180	28	Asynchronous Registered EPLD	CY7C331-20C *	Cypress	
25	64 x 32	—	8	16	—	—	115	28	Memory/instruction-based sequencer. Instruction-based with counter and stack.	AM29CPL151H-25	AMD	
	512 x 32	—	7	16	—	—	125	28	Memory/instruction-based sequencers. Instruction-based with counter and stack.	AM29CPL154H-25	* AMD	
23.8	192	12	31	12	12	130	180	28	Asynchronous Registered EPLD	CY7C331-25C *	Cypress	5
22	64	8	8	8	—	—	70	20		PALC16R8-30M	Cypress	
20	192	12	31	12	12	160	200	28	Asynchronous Registered EPLD	CY7C331-25M	*† Cypress	
18.1	192	12	31	12	12	160	200	28	Asynchronous Registered EPLD	CY7C331-30M	*† Cypress	
18	64	8	8	8	—	—	70	20		PALC16R8-35C	Cypress	
17.5	192	12	31	12	12	130	180	28	Asynchronous Registered EPLD	CY7C331-35C *	Cypress	10
16.7	68	16	15	8	—	0.1	80	28	CMOS Logic Sequencer (Mealy type), 17 inputs, 64 transition terms, zero power mode, 2 clocks, 8 registered outputs	PLC415-16	o† Signetics	
16.5	64	8	8	8	—	—	70	20		PALC16R8-40M	Cypress	
14.2	192	12	31	12	12	160	200	28	Asynchronous Registered EPLD	CY7C331-40M	*† Cypress	
Electrically Erasable Programmable—Registered Outputs Only												
27	75	22	10	—	10	—	150	24		GAL6001-30L	o† National	

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs													
5	125	64		10	2	6		180	20		TIBPAL16L8-5	° TI	5
				14	2	6		210	24		TIBPAL20L8-5	° TI	
			4	8	4	4		180	20		TIBPAL16R4-5	° TI	
				10	4	4		210	24		TIBPAL20R4-5	° TI	
			6	8	6	2		180	20		TIBPAL16R6-5	° TI	
				10	6	2		210	24		TIBPAL20R6-5	° TI	
			8	8	8			180	20		TIBPAL16R8-5	° TI	
				10	8			210	24		TIBPAL20R8-5	° TI	
6	156	16		12	8		180	180	28	BiCMOS Technology	CY7B336-6C ° Cypress CY7B338-6C ° Cypress		10
7	131	16		12	8		180	180	28	BiCMOS Technology	CY7B336-7M °† Cypress CY7B338-7M °† Cypress		15
				12	8		180	180	28	BiCMOS Technology	CY7B337-7C ° Cypress CY7B339-7C ° Cypress		
				12	8		180	180	28	BiCMOS Technology			
7.5	111	160	10	22	10	8	10	190	190	28	Universal PAL Device	PAL22VP10C-7C Cypress (3437)	25
						10	10	190	190	28	Universal PAL Device	PAL22V10C-7C Cypress (3437)	
8	113	16		12	8		180	180	28	BiCMOS Technology	CY7B336-8C ° Cypress CY7B338-8C ° Cypress		20
				12	8		180	180	28	BiCMOS Technology	CY7B337-8M °† Cypress CY7B339-8M °† Cypress		
				12	8		180	180	28	BiCMOS Technology			
9	111	16		12	8		180	180	28	BiCMOS Technology	CY7B337-9C ° Cypress CY7B339-9C ° Cypress		30
				12	8		180	180	28	BiCMOS Technology			
10	83.3	146		7		16	150	170	28	BiCMOS Technology	CY7B333-10C ° Cypress		35
			10	22	10	10	190	190	28	Universal PAL Device	PAL22VP10C-10C Cypress (3437)		
											PAL22V10C-10C Cypress (3437)		
	96	16		12	8		180	180	28	BiCMOS Technology	CY7B336-10M °† Cypress CY7B337-10M °† Cypress CY7B338-10M °† Cypress		
	32			12	8		180	180	28	BiCMOS Technology	CY7B339-10M °† Cypress		
12	50	160		4		16	150	170	24	BiCMOS Technology	CY7B326-12C ° Cypress		40
				7		16	150	170	28	BiCMOS Technology	CY7B333-12C ° Cypress		
							170	190	28	BiCMOS Technology	CY7B333-12M °† Cypress		
	71	160	10	22	10	10	190	190	28	Universal PAL Device	PAL22VP10C-12C Cypress (3437)		
											PAL22VP10C-12M °† Cypress (3437)		
											PAL22V10C-12C Cypress (3437)		
	80	16		12	8		180	180	28	BiCMOS Technology	CY7B336-12M °† Cypress CY7B337-12M °† Cypress CY7B338-12M °† Cypress		
	32			12	8		180	180	28	BiCMOS Technology	CY7B339-12M °† Cypress		
15	41.7	160		4		16	75	75	20	8 Macrocell Replacement	EP330-12 ° Altera		45
							150	170	24	BiCMOS Technology	CY7B326-15C ° Cypress		
							170	190	24	BiCMOS Technology	CY7B326-15M °† Cypress		

(Continued)

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‡ High Rad Resistance

* Typical Value

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs											(Cont'd)		
15	50	146		7		16	170	190	28	BiCMOS Technology	CY7B333-15M	(Cont'd)	
	57	160	10	22	10	10	190	190	28	Universal PAL Device	† Cypress PAL22VP10C-15M † Cypress PAL22V10C-15M † Cypress	(3437) (3437)	
	100	64	8	10		8	75	75	20	8 Macrocell PAL/GAL Replacement	EP330-15	Altera	
17	33.3	160		4		16	170	190	24	BiCMOS Technology	CY7B326-17M	† Cypress	5
Erasable Programmable—Registered/Combinatorial Outputs													
											EPM5310-2	Altera	
	20	768		8	16		95	140	28	Stand Alone Microsequencer	EPS448	† Altera	
3	66.6	256		10	10	12	140	180	28		CY7C330-66C	Cypress	
5	40	256		10	10	12	150	180	28		CY7C330-40M		
	50	256		10	10	12	160	200	28		† Cypress CY7C330-50C * Cypress CY7C330-50M † Cypress		10
10	28.5	256		10	10	12	150	180	28		CY7C330-28M * Cypress CY7C330-33C * Cypress		
	33.3	256		10	10	12	130	160	28				
15	47.6	192		12	10	12	120	180	28		CY7C332-15C * Cypress		
	66.6	72	8	10		8		45	20	8 Macrocells, Available in OTP Package	EP330	Ti	15
	83.3	160	16	4		16	150	90	24	16 Macro-cell Zero-Power EPLD	EP610-15	Altera	
		240	24	12		24	150	150	40	24 Macrocell High-Performance EPLD	EP910A-15	Altera	
		320	32	8		16	150	155	28	32 Macrocell MAX EPLD	EPM5032-15	Altera	
	100	160	16	8		8	110	115	20	16 Macrocell MAX EPLD	EPM5016-15	Altera	
17	83.3	160	16	8		8	110	115	20	16 Macrocell MAX EPLD	EPM5016-17	Altera	20
		320	32	8		16	150	155	28	32 Macrocell MAX EPLD	EPM5032-17	Altera	
20	28.5	64	4	8	4	4	—	70	20		PALC16R4-20M	Cypress	
			6	8	6	2	—	70	20		PALC16R6-20M	Cypress	
	37	192		12	10	12	150	200	28		CY7C332-20M		
	43.4	192		12	10	12	120	180	28		† Cypress CY7C332-20C * Cypress		25
	50		256			64	10	100	120	2000 gate FPGA	XC4002	† Xilinx (3785)	
			360			80	10	110	120	3000 gate FPGA	XC4003	† Xilinx (3785, 3790)	
			480			96	10	120	160	4000 gate FPGA	XC4004	† Xilinx (3785)	
			616			112	10	140	160	5000 gate FPGA	XC4005	† Xilinx (3785, 3790)	
			768			128	10	160	160	600 gate FPGA	XC4006	† Xilinx (3785, 3790)	30
			936			144	10	180	192		XC4008	† Xilinx (3785, 3790)	
			1120			160	10	200	192	10000 gate FPGA	XC4010	† Xilinx (3785, 3790)	
55	160	16	4			16	0.15	100	24	16 Macrocells, Available in OTP Package	EP630	Ti	35
62.5	160	16	4			16	150	90	24	16 Macrocell Zero-Power EPLD	EP610-20	Altera	
			8			8	110	115	20	16 Macrocell MAX EPLD	EPM5016-20	Altera	
		480	48	16		48	150	225	68	48 Macrocell Zero-Power EPLD	EP1810-20	Altera	
71.4	320	32	8			16	150	155	28	32 Macrocell MAX EPLD	EPM5032-20	Altera	
83	240	24	8			12		100	24	24 Macrocells, Available in OTP Package	EPM6024	Ti	
		320	32	8		16		125	28	32 Macrocells, Available in OTP Package	EPM6032	Ti	
25	28	88	8	10	—	8	80	80	24	48ma output drivers	PLX448	† PLX Tech	40
									28	64ma output drivers	PLX464	† PLX Tech	
	28.5	64	4	8	4	4	—	70	20		PALC16R4-25C	Cypress	
			6	8	6	2	—	70	20		PALC16R6-25C	Cypress	
	34.4	256		12	10	12	150	200	28		CY7C332-25M		
											† Cypress		
	35.7	256		12	10	12	120	180	28		CY7C332-25C * Cypress		45
	40		256			64	10	100	100	1200 gate FPGA	XC3020	† Xilinx (3790)	
			360			80	10	120	100	1800 gate FPGA	XC3030	† Xilinx (3790)	
(Continued)													

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‡ High Rad Resistance

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Erased Programmable—Registered/Combinatorial Outputs												(Cont'd)	
25	40		480			96	10	140	132	2500 gate FPGA	KC3042 ♦† Xilinx (3790)		
			688			120	10	160	132	3500 gate FPGA	KC3064 ♦† Xilinx (3790)		
			928			144	10	180	175	5000 gate FPGA	KC3090 ♦† Xilinx (3790)		
50	480	48	16			48	150	225	68	48 Macrocell Zero-Power EPLD	EP1810-25 ♦ Altera		
62.5	240	24	12			24	150	150	40	24 Macrocell High-Performance EPLD	EP910A-25 ♦ Altera	5	
	320	32	8			16	150	155	28	32 Macrocell MAX EPLD	EPM5032-25 ♦† Altera		
	640	64	8			28	125	135	44	64 Macrocell MAX EPLD	EPM5064-1 ♦ Altera		
	1280	128	8			52	225	250	68	128 Macrocell MAX EPLD	EPM5128-1 ♦ Altera		
			20			48	250	275	84	128 Macrocell MAX EPLD	EPM5130J-1 ♦ Altera		
						64	250	275	100	128 Macrocell MAX EPLD	EPM5130-1 ♦ Altera	10	
	1920	192	8			64	360	380	84	192 Macrocell MAX EPLD	EPM5192-1 ♦ Altera		
4706	160	16	4			16	150	60	24	16 Macrocell Zero-Power EPLD	EP610-25 ♦ Altera		
30	22	64	4	8	4	4	—	70	20	PALC16R4-30M Cypress			
			6	8	6	2	—	70	20	PALC16R6-30M Cypress			
	26.3	384		8	8		200	310	84	192 Macrocell MAX-EPLD	CY7C341-30C Cypress	15	
	29.4	256		12	10	12	150	200	28		CY7C332-30M	†† Cypress	
	41.7	160	16	4		16	150	60	24	16 Macrocell Zero-Power EPLD	EP610-30 ♦ Altera		
		240	24	12		24	150	80	40	24 Macrocell Zero-Power EPLD	EP910-30 ♦ Altera		
	50	640	64	8		28	125	135	44	64 Macrocell MAX EPLD	EPM5064-2 ♦ Altera		
		1280	128	8		52	225	250	68	128 Macrocell MAX EPLD	EPM5128-2 ♦ Altera		
				20		48	250	275	84	128 Macrocell MAX EPLD	EPM5130J-2 ♦ Altera		
						64	250	275	100	128 Macrocell MAX EPLD	EPM5130-2 ♦ Altera	20	
	1920	192	8			64	360	380	84	192 Macrocell MAX EPLD	EPM5192-2 ♦ Altera		
33	30		122			58	12	100	68	800 gate FPGA	2064-33/PC68C Micro-C		
											2064-50/PC68C Micro-C		
											2064-70/PC68C Micro-C		
											KC2064 ♦† Xilinx (3790)		
		174				74	12	100	84	1200 gate FPGA	KC2018 ♦† Xilinx (3790)		
35	18	64	4	8	4	4	—	70	20	PALC16R4-35C Cypress		30	
			6	8	6	2	—	70	20	PALC16R6-35C Cypress			
	22.2	384		8	8		200	310	84	192 Macrocell MAX-EPLD	CY7C341-35C Cypress		
							240	320	84	192 Macrocell MAX-EPLD	CY7C341-35M † Cypress		
	30	220	52	8	—	20	100	100	40	BUSTER EPLD. Available in OTP version.	EPB1400 ♦† Altera		
	37	160	16	4		16	150	60	24	16 Macrocell Zero-Power EPLD	EP610-35 ♦† Altera		
		240	24	12		24	150	80	40	24 Macrocell Zero-Power EPLD	EP910-35 Altera	35	
	40	480	48	16		48	150	180	68	48 Macrocell Zero-Power EPLD	EP1810-35 ♦ Altera		
		640	64	8		28	125	135	44	64 Macrocell MAX EPLD	EPM5064 ♦† Altera		
		1280	128	8		52	225	250	68	128 Macrocell MAX EPLD	EPM5128 ♦† Altera		
				20		48	250	275	84	128 Macrocell MAX EPLD	EPM5130J ♦ Altera		
						64	250	275	100	128 Macrocell MAX EPLD	EPM5130 ♦ Altera	40	
	1920	192	8			64	360	380	84	192 Macrocell MAX EPLD	EPM5192 ♦ Altera		
40	16.5	64	4	8	4	4	—	70	20	PALC16R4-40M Cypress			
			6	8	6	2	—	70	20	PALC16R6-40M Cypress			
	19.6	384		8	8		200	310	84	CY7C341-40C Cypress		45	
							240	320	84	CY7C341-40M † Cypress			
	32.3	240	24	12		24	150	80	40	24 Macrocell Zero-Power EPLD	EP910-40 ♦ Altera		
	35.7	480	48	16		48	150	180	68	48 Macrocell Zero-Power EPLD	EP1810-40 ♦ Altera		
45	26.3	160	16	4		16	150	60	24	16 Macrocell Zero-Power EPLD	EP600-45 ♦ Altera		
	28.6	240	24	12		24	150	80	40	24 Macrocell Zero-Power EPLD	EP910-45 ♦† Altera		
	33.3	480	48	16		48	150	180	68	48 Macrocell Zero-Power EPLD	EP1810-45 ♦† Altera	50	
55	25	64	—	10	2	6	—	70	20	TICPAL16L8-55C	♦ TI		
			4	8	4	4	—	79	20	TICPAL16R4-55C	♦ TI		
			6	8	6	2	—	70	20	TICPAL16R6-55C	♦ TI		
			8	8	8	—	—	70	20	TICPAL16R8-55C	♦ TI		
Electrically Erasable Programmable—Registered/Combinatorial Outputs													
7	100	64	8	8	8	8		115	20	GAL16V8B-7L ♦° Lattice (3561)		55	
9	71		24	36	24	24			40	Reprogrammable Flex-Cell Array	XL78C8240 EXEL		

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Electrically Erasable Programmable—Registered/Combinatorial Outputs (Cont'd)													
10	55.5		8	16	8	4			20	Universal PAL	PALCE16V8H-10C ◊° AMD		
	62.5	64	8	12	8	8		115	24		GAL20V8A-10L ◊° Lattice (3561)		
		74	8	10		8	120	151	20		PEEL18CV8-10 ◊° Gould AMI (3499)		
15	45.4			22	10		130	130	24	Generic Array Logic	GAL22V10-15LC * National		5
							150	150	24	Generic Array Logic	GAL22V10-15LI * National		
											GAL22V10-15LM *† National		
	45.5	64	8	8		8	55	55	20	GAL-Type Device	PALCE16V8Q-15 ◊° AMD		
				12		8	55	55	24	GAL-Type Device	PALCE20V8Q-15 ◊° AMD		
							110	110	24	GAL-Type Device	PALCE20V8H-15 ◊° AMD		
		80		14	10	10		90	28		PALCE24V10H-15 ◊° AMD		10
50	64	8	8			8		130	20		GAL16V8A-15L/883C *† Lattice		
						8	8	130	20		GAL16V8A-15L1 ◊° Lattice (3561)		
				12	8	8		130	24		GAL20V8A-15L1 ◊° Lattice (3561)		
			12	8		8		130	24		GAL20V8A-15L/883C *† Lattice		
			32	38	32	16			44		MACH110-15C ◊° AMD		15
			48	58	48	8			68		MACH120-15C ◊° AMD		
			64	38	32	8			44		MACH210-15C ◊° AMD		
		80	10	10	10	10		100	24		GAL20RA10-15L ◊° Lattice (3561)		
		92	10	12		10	105	130	24		PEEL20CG10-15 ◊° Gould AMI (3499)		
		128		4		16		90	28		PALCE610H-15 ◊° AMD		20
		132	10	12		10	105	130	24		PEEL22CV10-15 ◊° Gould AMI (3499)		
	62.5	84	10	8		10		115	20		GAL18V10-15L ◊° Lattice (3561)		
		108	12	14		12		130	28		GAL26CV12-15L ◊° Lattice (3561)		
20	33.3			22	10		130	130	24	Generic Array Logic	GAL22V10-20LC * National		
							150	150	24	Generic Array Logic	GAL22V10-20LI * National		25
											GAL22V10-20LM *† National		
		132	10	12		10		150	24		GAL22V10-20L/883C *† Lattice		
40	64	32	38		32	16			44		MACH110-20C ◊° AMD		
											MACH110-20M ◊°† AMD		
		48	58		48	8			68		MACH120-20C ◊° AMD		30
											MACH120-20M ◊† AMD		
		64	38		32	8			44		MACH210-20C ◊° AMD		
											MACH210-20M ◊°† AMD		
		148	12	14		12	105	105	28	28-pin 22V10	PALCE26V12H-20 ◊° AMD		
	41.6	64	8	8		8		90	24		ISPQAL16Z8-20L ◊ Lattice		35
								130	20		GAL16V8A-20L/883C *† Lattice		
			12	8		8		130	24		GAL20V8A-20L/883C *† Lattice		

PROGRAMMABLE LOGIC

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Electrically Erasable Programmable—Registered/Combinatorial Outputs (Cont'd)													
20	41.7	64	8	8	8	8		65	20		GAL16V8A-20Q/883C °† Lattice GAL16V8A-20QM °† Lattice GAL16V8A-20Q1 ° Lattice	(Cont'd)	
								130	20		GAL16V8A-20L1 ° Lattice		
			12	8	8		65		24		GAL20V8A-20Q/883C °† Lattice GAL20V8A-20QM °† Lattice GAL20V8A-20Q1 ° Lattice		5
								130	24		GAL20V8A-20L1 ° Lattice		
	80	10	10	10	10	10		100	24		GAL20RA10-20L ° Lattice GAL20RA10-20L/883C °† Lattice GAL20RA10-20L1 ° Lattice GAL20RA10-20LM °† Lattice		10
								120	24				
50	122	10	12	10	10	10		150	24		GAL22V10-20L1 ° Lattice		
	132	10	12		10			150	24		GAL22V10-20L ° Lattice		
62.5	84	10	8		10	10		115	20		GAL18V10-20L ° Lattice (3561)		15
					10	10		125	20		GAL18V10-20L1 ° Lattice		
	108	12	14		12	12		130	28		GAL26CV12-20L ° Lattice (3561)		
					12	12		150	28		GAL26CV12-20L1 ° Lattice		
23	50	84	40	2	—	20	100	100mA + 0.5mA/MHz	24	High density logic array. Approx. 1200-equiv. gates.	PA7024 ° ICT (3546)		
		124	48	14	—	24	150	150mA + 0.5mA/MHz	24	High density logic array. Approx. 1700-equiv. gates.	PA7040 ° ICT (3546)		20
25	28.5			22	10		130	130	24	Generic Array Logic	GAL22V10-25LC ° National		
							150	150	24	Generic Array Logic	GAL22V10-25L1 ° National GAL22V10-25LM °† National		
28.6	128		4			16		90	28		PALCE610H-25 ° AMD		
33.3	64	8	8			8		90	24		SPGAL16Z8-25L ° Lattice		25
					8	8		130	20		GAL16V8A-25L1 °† Lattice		
			12	8	8			130	24		GAL20V8A-25L1 ° Lattice (3561)		
	64–192	—	5	—	16 macrocells	—	100	24		Asynchronous PAL. Programmable clock. Advanced I/O macrocell.	PALCE29MA16H-25 AMD		
	148	12	14			12	105	105	28	28-pin 22V10	PALCE26V12H-25 ° AMD		
37	64	8	12			8	55	55	24	GAL-Type Device	PALCE20V8Q-25 ° AMD		30
							110	110	24	GAL-Type Device	PALCE20V8H-25 ° AMD		
	120		14	10	10			90	28		PALCE24V10H-25 ° AMD		
45.5		44	8	16			115	115	28	Instruction-based Microcontroller	AM29CPL151H-25 ° AMD		
		54	7	16			125	125	28	Instruction-based Microcontroller	AM29CPL154H-25 ° AMD		

(Continued)

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Electrically Erasable Programmable—Registered/Combinatorial Outputs (Cont'd)													
25	45.5	64	8	8		8	55	55	20	GAL-Type Device	PALCE16V8Q-25 ◊* AMD	(Cont'd)	
30	22.2			22	10		130	130	24	Generic Array Logic	GAL22V10-30LC * National		
							150	150	24	Generic Array Logic	GAL22V10-30LI * National		
											GAL22V10-30LM *† National		
	25	132	10	12		10		150	24		GAL22V10-30L/883C *† Lattice		5
	33.3		54	7	16		125	125	28	Instruction-based Microcontroller	AM29CPL154H-30 ◊* AMD		
		64	8	8		8		130	20		GAL16V8A-30L/883C *† Lattice		
			12	8		8		130	24		GAL20V8A-30L/883C *† Lattice		
33	30		44	8	16		115	115	28	Instruction-based Microcontroller	AM29CPL151H-33 ◊ AMD		
35	27	75	18	10		10		150	24		GAL6001-35 ◊* Lattice (3561)		10
60	12	41	8	9	0	9	0.04	25	20		TC9800 TC9801	◊ Toshiba ◊ Toshiba	
One-Time Programmable—Superset													
15	66	96-192	—	12	—	10	—	90	24	Varied term distribution	PALC22V10-15 Cypress (3437)		
	83.3	132	10	12	0	10	90	90	24	Varied Term Distribution	AT22V10-15 ◊* ATMEL		
20	50	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-20 † ATMEL		15
	50.0	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-20 ◊*† ATMEL		
							55	55	24	Varied Term Distribution	AT22V10-20 ◊*† ATMEL		
	55	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-20 ◊* ATMEL		
							120	120	24	750 gate EPLD	ATV750-20 ◊*† ATMEL		
25	40	416	48	14	0	24	120	120	40	2500 gate EPLD	ATV2500H-25 ◊*† ATMEL		20
	41.6	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-25 ◊* ATMEL		
							55	55	24	Varied Term Distribution	AT22V10-25 ◊*† ATMEL		
											AT22V10-25 ◊*† ATMEL		
	45	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-25 ◊*† ATMEL		
							120	120	24	750 gate EPLD	ATV750-25 ◊*† ATMEL		25
	50	120	10	12	10	10	0.1	2ma/MHz	24	CMOS Macrocell	TiCPAL22V10Z-25C ◊* TI		
		1216	128	8	0	52	40	40	68	5000 gate EPLD	ATV5000-25 ◊ ATMEL		
30	33	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-30 ◊ ATMEL		
							120	120	40	2500 gate EPLD	ATV2500H-30 ◊*† ATMEL		
	33.3	132	10	12	0	10	15	55	24	Varied Term Distribution	AT22V10L-30 ◊*† ATMEL		30
							55	55	24	Varied Term Distribution	AT22V10-30 ◊*† ATMEL		
	40	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-30 ◊*† ATMEL		
							12	120	24	750 gate EPLD	ATV750-30 ◊*† ATMEL		
		1216	128	8	0	52	40	40	68	5000 gate EPLD	ATV5000-30 ◊† ATMEL		
35	28	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-35 ◊*† ATMEL		35
							120	120	40	2500 gate EPLD	ATV2500H-35 ◊*† ATMEL		
(Continued)													

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Superset											(Cont'd)		
35	33	120	10	12	10	10	0.1	2ma/MHz	24	CMOS Macrocell	TICPAL22V10Z-35C ° Ti	(Cont'd)	
	33.3	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-35 °* ATMEL		
							55	55	24	Varied Term Distribution	AT22V10-35 °* ATMEL		
	35	1216	128	8	0	52	40	40	68	5000 gate EPLD	ATV5000-35 °† ATMEL		
40	22	132	10	12	0	10	15	55	24	Varied Term Distribution	AT22V10L-40 °*† ATMEL		5
							55	55	24	Varied Term Distribution	AT22V10-40 °*† ATMEL		
	25	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-40 °*† ATMEL		
	28	171	20	12	0	10	120	120	24	750 gate EPLD	ATV750-40 °*† ATMEL		
45	22	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-45 °*† ATMEL		
Erasable Programmable—Superset													
									430		ATV2500-30 ° ATMEL		10
12	45.5	8	—	—	—	—	—	80	20	Replaces: 10H8, 12H6, 14H4, 16H2, 10L8, 12L6, 14L4, 16L2, 10P8, 12P6, 14P4, 16P2, 16H8, 16L8, 16P8, 16R8, 16R6, 16R4, 16RP8, 16RP6, 16RP4, 18P8, 16V8	PLDC18G8-12C Cypress		
15	41.6	8	—	—	—	—	—	80	20	Replaces: 10H8, 12H6, 14H4, 16H2, 10L8, 12L6, 14L4, 16L2, 10P8, 12P6, 14P4, 16P2, 16H8, 16L8, 16P8, 16R8, 16R6, 16R4, 16RP8, 16RP6, 16RP4, 18P8, 16V8	PLDC18G8-15C Cypress		
	50	96-192	—	12	—	10	—	90	24	Varied term distribution	PALC22V10-15 ° Cypress	(3437)	
	83.3	132	10	12	0	10	90	90	24	Varied Term Distribution	AT22V10-15 °* ATMEL		
20	28.6	8	—	—	—	—	—	110	20	Replaces: 10H8, 12H6, 14H4, 16H2, 10L8, 12L6, 14L4, 16L2, 10P8, 12P6, 14P4, 16P2, 16H8, 16L8, 16P8, 16R8, 16R6, 16R4, 16RP8, 16RP6, 16RP4, 18P8, 16V8	PLDC18G8-20M Cypress		15
	33.3	—	—	20	—	10	—	80	24	Macrocell architecture	PLDC20RA10-20C Cypress		
	41.6	96-192	—	12	—	10	—	120	24	Varied term distribution	PALC22V10-20C Cypress		
	50	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-20 °*† ATMEL		
							55	55	24	Varied Term Distribution	AT22V10-20 °*† ATMEL		
	55	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-20 °* ATMEL		20
							120	120	24	750 gate EPLD	ATV750-20 °*† ATMEL		
25	25	—	—	20	—	10	—	100	24	Macrocell architecture	PLDC20RA10-25M Cypress		
	28	—	—	—	—	—	—	—	—		TICPAL22V10Z-25 ° Ti		
	33.3	—	—	—	—	—	—	100	24	Replaces: 20L10, 20L8, 20R8, 20R6, 20R4, 12L10, 14L8, 16L6, 18L4, 20L2, 20V8	PLDC20G10-25C Cypress		25
	96-192	—	12	—	—	10	—	55	24	Varied term distribution	PALC22V10-25C Cypress		
	40	416	48	14	0	24	120	120	40	2500 gate EPLD	ATV2500H-25 °*† ATMEL		
	41.6	132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-25 °*† ATMEL		
							55	55	24	Varied Term Distribution	AT22V10-25 °*† ATMEL		
	45	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-25 °*† ATMEL		
							120	120	24	750 gate EPLD	ATV750-25 °*† ATMEL		30
	50	126	128	8	0	52	40	40	68	5000 gate EPLD	ATV5000-25 ° ATMEL		

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line								
Erasable Programmable—Superset											(Cont'd)										
30	22.2	—	—	20	—	10	—	80	24	Macrocell architecture	PLDC20RA10-30C	Cypress	5								
	25	—	—	—	—	—	—	80	24	Replaces: 20L10, 20L8, 20R8, 20R6, 20R4, 12L10, 14L8, 16L6, 18L4, 20L2, 20V8	PLDC20G10-30M	Cypress									
	96-192	—	12	—	10	—	120	24	Varied term distribution	PALC22V10-30M	Cypress										
	33	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-30 °	ATMEL	10								
								120	40	2500 gate EPLD	ATV2500H-30 °†	ATMEL									
	33.3	132	10	12	0	10	15	55	24	Varied Term Distribution	AT22V10L-30 °†	ATMEL	15								
											55	24		Varied Term Distribution	AT22V10-30 °†	ATMEL					
															10	10	0.01	15	24	AT22V10L-30 °	ATMEL
															171	20	22	22	22	0.01	120
	416	48	14	100	0.01	10	40	ATV2500H-30 °	ATMEL												
	40	171	20	12	0	10	12	120	24	750 gate EPLD	ATV750L-30 °†	ATMEL	15								
											120	24		750 gate EPLD	ATV750-30 °†	ATMEL					
															1216	128	8	0	52	40	40
	35	18.1	—	—	—	—	—	—	55	24	Replaces: 20L10, 20L8, 20R8, 20R6, 20R4, 12L10, 14L8, 16L6, 18L4, 20L2, 20V8	PLDC20G10-35C	Cypress	20							
												20	—		10	—	100	24	Macrocell architecture	PLDC20RA10-35M	Cypress
96-192																				—	12
21		74	8	8	—	8	0.1	22.5	20	CMOS Zero Power Programmable Array Logic, 18 inputs, 74 product terms, 8 output macrocells	PLC18V8Z °†	Signetics (3663)	25								
25		105	10	8	—	12	60	90	24	CMOS Programmable Logic Sequencer, 22 inputs, 32 64-input OR gates, synch and asynch clocks, 10 output macrocells	PLC42VA12 °	Signetics (3662)									
											28	416		48	14	0	24	5	120	40	2500 gate EPLD
120		40	2500 gate EPLD	ATV2500H-35 °†	ATMEL																
28.6		132	10	12	10	10	0.01	15	24	AT22V10L-35 °	ATMEL	30									
											0.012		100	24	AT22V10-35 °	ATMEL					
		171	20	22	22	22	0.01	120	24	ATV750-35 °	ATMEL	35									
											416		48	14	100	0.01	10	40	ATV2500-35 °	ATMEL	
											ATV2500H-35 °	ATMEL									
33		171	20	0	0	10	120	120	24	750 gate EPLD	ATV750-35 °†	ATMEL	40								
33.3		132	10	12	0	10	12	55	24	Varied Term Distribution	AT22V10L-35 °	ATMEL									
											55	55		24	Varied Term Distribution	AT22V10-35 °	ATMEL				
35	1216	128	8	0	52	40	40	68	5000 gate EPLD	ATV5000-35 °†	ATMEL										
40	18.1	96-192	—	12	—	10	—	100	24	Varied term distribution	PALC22V10-40M	Cypress	35								
	25	132	10	12	10	10	0.01	15	24	AT22V10L-40 °	ATMEL										
											0.012	100		24	AT22V10-40 °	ATMEL					
		171	20	22	22	22	0.01	120	24	ATV750-40 °	ATMEL										
											416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-40 °†	ATMEL
	28	171	20	12	0	10	120	120	24	750 gate EPLD	ATV750-40 °†	ATMEL									
16.6	—	—	—	—	—	—	80	24	Replaces: 20L10, 20L8, 20R8, 20R6, 20R4, 12L10, 14L8, 16L6, 18L4, 20L2, 20V8	PLDC20G10-40M	Cypress										
45	22	416	48	14	0	24	5	120	40	2500 gate EPLD	ATV2500-45 °†	ATMEL									
Electrically Erasable Programmable—Superset																					
10	62.5	64	8	8	—	8	—	115	20	Generic PLD	GAL16V8A-10L	°	40								
				12	—	8	—	115	24	Generic PLD	GAL20V8A-10L	°									
											(Continued)										

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Electrically Erasable Programmable—Superset											(Cont'd)		
10	62.5	74	8	10	—	8	80	80 + 0.5mA/MHz 20	20	PAL superset, 12-configurable I/O macrocells	PEEL18CV8-10 ° ICT (3545) PEEL18CV8-10 ° Gould AMI (3499)		
12	57	132	10	12	—	10	105	105mA + 0.5mA/MHz 24	24	PAL superset, 4/12-configurable I/O macrocells	PEEL22CV10-12 ° ICT (3545)		
15	41.6 50	64 64	— 8	8 8	— 8	8 8	— —	90 55 130	20 20 20	Prog enable Generic PLD Generic PLD	PALCE16V8H-15 AMD GAL16V8A-15Q ° Lattice (3561) GAL16V8A-15LM °† Lattice (3561)	5	
				10	—	8	—	90	20	Generic Programmable Array Logic	GAL16V8-15H °† Lattice (3561)		
				12	—	8	—	45	24	Generic Programmable Array Logic	GAL20V8-15H ° SGS-Thomson ° SGS-Thomson		
								55 115 130	24 24 24	Generic PLD Generic PLD Generic PLD	GAL20V8A-15Q ° Lattice (3561) GAL20V8A-15L ° Lattice (3561) GAL20V8A-15LM °† Lattice	10	
		74	8	10	—	8	80	80mA + 0.5mA/MHz 20	20	PAL superset, 8 I/O macrocells with 12 configurations.	PEEL18CV8-15 ° ICT (3545) PEEL18CV8-15 ° Gould AMI (3499)		
								90	125	20			
		92	10	12	—	10	105	130	24		PEEL20CG10-15 ° Gould AMI (3499)		
		96-192	—	12	—	10	—	90	24	Varied term distribution	PALCE22V10H-15 ° AMD	15	
		132	10	12	—	10	105	130	24		PEEL22CV10-15 ° Gould AMI (3499)		
	59 62.5	64 132	8 10	8 12	— —	8 10	— —	115 130	20 24	Generic PLD Generic PLD	GAL16V8A-15L ° Lattice (3561) GAL22V10-15L ° Lattice (3561)		
20	33.3	8-16	—	14	—	12	—	90	28	Varied term distribution	PALCE26V12H-20 ° AMD		
		132	10	12	—	10	—	150	24	Generic PLD	GAL22V10-20LM °† Lattice	20	
	40	92	10	12	—	10	65	65mA + 0.5mA/MHz 24	24	PAL superset, 10 I/O macrocells with 12 configurations.	PEEL20CG10-20 ° ICT (3545)		
		132	10	12	—	10	65	65mA + 0.5mA/MHz 24	24	PAL superset, 10 I/O macrocells with 12 configurations.	PEEL22CV10-20 ° ICT (3545)		
	41.6	64	8	8	—	8	—	130	20	Generic PLD	GAL16V8A-20LM °† Lattice		
				10	8	90	—	90	20	Generic Programmable Array Logic	GAL16V8-20H ° SGS-Thomson		
				12	—	8	—	90	24	Generic Programmable Array Logic	GALV20V8-20 ° SGS-Thomson	25	
								130	24	Generic PLD	GAL20V8A-20LM °† Lattice		
		74	8	10	—	8	80	80mA + 0.5mA/MHz 20	20	PAL superset, 8 I/O macrocells with 12 configurations.	PEEL18CV8-20 ° ICT (3545)		
25	28.5	64 96-192	— —	8 12	— —	8 10	— —	90 90	20 24	Prog enable Varied term distribution	PALCE16V8H-25 AMD PALCE22V10H-25 ° AMD		
	28.8	96-192	—	12	—	10	—	45	24	Varied term distribution	PALCE22V10Q-25 ° AMD	30	
	33.3	64	8	8	—	8	—	55 115	20 20	Generic PLD Generic PLD	GAL16V8A-25Q ° Lattice (3561) GAL16V8A-25L ° Lattice (3561)		
				10	—	8	—	45	20	Generic Programmable Array Logic	GAL16V8-25Q ° SGS-Thomson		
								90	20	Generic Programmable Array Logic	GAL16V8-25H ° SGS-Thomson		
				12	—	8	—	45	28	Generic Programmable Array Logic	GAL20V8-25Q ° SGS-Thomson	35	
								55	24	Generic PLD	GAL20V8A-25Q ° Lattice (3561)		

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PROGRAMMABLE LOGIC DEVICES—CMOS (Cont'd)

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
Electrically Erasable Programmable—Superset											(Cont'd)		
25	33.3	64	8	12	—	8	—	90	24	Generic Programmable Array Logic	GAL20V8-25H	◊* SGS-Thomson	5
								115	24	Generic PLD	GAL20V8A-25L	◊* Lattice (3561)	
		74	8	10	—	8	20	20mA + 0.7mA/MHz	20	PAL superset. 8 I/O macrocells with 12 configurations.	PEEL18CV8-25	◊* ICT (3545)	
		128-256	—	5	—	16	—	100	24	Advanced I/O macrocell	PALCE29M16H-25	AMD	
		132	10	12	—	10	—	130	24	Generic PLD	GAL22V10-25L	◊* Lattice (3561)	
								55	72	200mA zero power	PEEL22CV10Z	◊* Gould AMI (3499)	10
										22V10 replacement	PEEL22CV10	◊* Gould AMI (3499)	
35.3	74	8	10	—	8	25	50	20			PEEL18CV8	◊*† Gould AMI (3499)	
37	92	10	12	—	10	55	55mA + 0.5mA/MHz	24		PAL superset. 10 I/O macrocells with 12 configurations.	PEEL20CG10-25	◊* ICT (3545)	
	132	10	12	—	10	0.2	55mA + 0.5mA/MHz	24		PAL superset with zero power feature	PEEL22CV10Z-25	◊* ICT (3545)	
							55	55mA + 0.5mA/MHz	24	PAL superset. 10 I/O macrocells with 12 configurations.	PEEL22CV10-25	◊* ICT (3545)	15
40	92	10	12	—	10	55	75	24			PEEL20CG10	◊* Gould AMI (3499)	
	96-192	—	14	—	12	—	90	28		Varied term distribution	PALCE26V12H-25	◊* AMD	
30	22.9	179	108	11	—	10	—	90	24	Generic Programmable Array Logic	GAL39V18-30H	◊ SGS-Thomson	
	25	132	10	12	—	10	—	150	24	Generic PLD	GAL22V10-30LM	◊*† Lattice	
	27	75	18	10	—	10	—	150	24	FPLA	GAL6001-30	◊* Lattice (3561)	20
	33.3	64	8	8	—	8	—	130	20	Generic PLD	GAL16V8A-30LM	◊*† Lattice	
				12	—	8	—	130	24	Generic PLD	GAL20V8A-30LM	◊*† Lattice	
35	22.2	74	8	10	—	8	20	20mA + 0.7mA/MHz	20	PAL superset. 8 I/O macrocells with 12 configurations.	PEEL18CV8-35	◊* ICT (3545)	
		92	10	12	—	10	55	55mA + 0.5mA/MHz	24	PAL superset. 10 I/O macrocells with 12 configurations.	PEEL20CG10-35	◊* ICT (3545)	
		132	10	12	—	10	55	55mA + 0.5mA/MHz	24	PAL superset. 10 I/O macrocells with 12 configurations.	PEEL22CV10-35	◊* ICT (3545)	25
	22.5	132	10	12	—	10	0.2	55mA + 0.5mA/MHz	24	PAL superset with zero power feature	PEEL22CV10Z-35	◊* ICT (3545)	
	25	128-256	—	14	—	16	—	100	24	Advanced I/O macrocell	PALCE29M16H-35	AMD	
	28.6	64	8	10	—	8	—	45	20	Generic Programmable Array Logic	GAL16V8-35Q	◊* SGS-Thomson	
				12	—	8	—	45	24	Generic Programmable Array Logic	GAL20V8-35Q	◊* SGS-Thomson	

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

°Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—ECL

Max Propaga- tion Delay (ns)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Combinatorial Outputs												
3			16	4		170	170	28	10K Compatible 100K Compatible	CY10E302-3C ° Cypress CY100E302-3C ° Cypress		
					4	220	0.5	24	10KH Compatible 100K Compatible	CY10E302-3C ° Aspen CY100E302-3C ° Aspen		
4			16	4		170	170	28	10K Compatible 100K Compatible	CY10E302-4C ° Cypress CY10E302L-4C Cypress CY100E302-4C ° Cypress CY100E302L-4C ° Cypress		5
						220	220	28	10K Compatible	CY10E302-4M °† Cypress		
					4	170	0.5	24	10KH Compatible 100K Compatible	CY10E302L-4C ° Aspen CY100E302L-4C ° Aspen		10
						220	0.5	24	10KH Compatible 100K Compatible	CY10E302-4C ° Aspen CY10E302-4M °† Aspen CY100E302-4C ° Aspen		
					8	4	170	170	28	10K Compatible 100K Compatible	CY10E301-4C ° Cypress CY100E301-4C ° Cypress	15
					8	240	0.5	24	10KH Compatible 100K Compatible	CY10E301-4C ° Aspen CY100E301-4C ° Aspen		
	32	—	16	4	—	—	220	24		PAL10016P4A ° National PAL1016P4A ° National		20
5			16	8	4	240	240	28	10K Compatible	CY10E301-5M °† Cypress		
					8	240	0.5	24	10KH Compatible	CY10E301-5M °† Aspen		
6			16	8	4	170	170	28	10K Compatible 100K Compatible	CY10E301L-6C ° Cypress CY100E301L-6C ° Cypress		
					8	170	0.5	24	10KH Compatible	CY10E301L-6C ° Aspen		25
	32	—	12	4	4	—	240	24		PAL10016P8 ° National PAL1016P8 ° National		

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

* Typical Value

° Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—ECL (Cont'd)

Max Clock Frequency (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line	
One-Time Programmable—Registered Outputs Only													
200	32	4	12	—	4	—	240	24		PAL10016RM4A PAL1016RM4A	National National		
117	64	8	8	8	—	—	280	24		PAL10016RD8 * PAL1016RD8 *	National National		
One-Time Programmable—Superset													
4.5	200	90	8	11	—	8	—	230	24	ECL 10KH Field Programmable Array Logic, 20 inputs, 90 product terms, 8 output macro cells ECL 100K Field Programmable Array Logic, 20 inputs, 90 product terms, 8 output macro cells	10H20EV8 † 10020EV8 †	Signetics Signetics	5

† Mil Temp Range (–55° to 125°C)

‡ High Rad Resistance

*Typical Value

*Behavioral Model Available

◊ Available in Surface Mount Package

Bold face indicates additional data is provided on the page noted.

PROGRAMMABLE LOGIC DEVICES—Gallium Arsenide

Max Propaga- tion Delay (ns)	Max Clock Freq (MHz)	Product Terms	Flip Flops	Dedi- cated Inputs	Dedi- cated Outputs	Bidirec- tional I/Os	Max Standby Current (mA)	Max Active Current (mA)	Pins	Description	Device	Source	Line
One-Time Programmable—Registered/Combinatorial Outputs													
7.5	166	135	14	9	—	8	—	220	20	20 pin PLD sequencer	GA23S8-7SC	TriQuint	
One-Time Programmable—Superset													
7.5	166	135	14	9	—	8	—	220	20	20-pin PLD Superset	GA23SV8-7SC	TriQuint	
10	153	135	14	9	—	8	—	220	20	20-pin PLD Superset	GA23SV8-10SC	TriQuint	
12	105	135	14	9	—	8	—	220	20	20 pin PLD Superset	GA23SV8-12M	TriQuint	

† Mil Temp Range (–55° to 125°C) ‡ High Rad Resistance *Typical Value °Behavioral Model Available ◊ Available in Surface Mount Package
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PROGRAMMABLE LOGIC

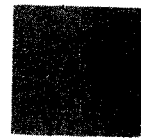
PROGRAMMABLE LOGIC DEVICES—Programmable Logic Design Automation Tools

Array Source	Device Family	Logic Schematic	Net List	Boolean Equations	State Diagram	Development System	Source	Line
Altera	EPLDs	x	x	x	x	PLCAD-SUPREME	Altera	5
		x	x	x	x	PLCAD 4	Altera	
		x	x	x	x	PLDS-ENCORE	Altera	
		x	x	x	x	PLDS-MAX	Altera	
		x	x	x	x			
EXEL Microelectronics	ERASIC	x	x	x	x	XL26XXX	Data I/O	5
		x	x	x	x	XL26XXX	EXEL	
		x	x	x	x	XL26XXX	FutureNet	
Intel	EPLDs	x	x	x	x	iPLDS	Intel	10
	5CXXX	x	x	x	x	iPLDS	Intel	
Micro-C	2064-33/PC68C	x	x	x	x		MicroLinear	10
	2064-50/PC68C	x	x	x	x			
	2064-70/PC68C	x	x	x	x			
Signetics	AMAZE	x		x		PROPRIETARY	Signetics	15
	SNAP	x	x	x		PROPRIETARY	Signetics	
Xilinx	PROGRAMMABLE GATE ARRAYS	x	x	x		XACT	Xilinx	15
	XC20XX	x	x	x	x	XACT	Xilinx	
	XC2064	x	x	x	x	XACT	Xilinx	
	XC30XX	x	x	x	x	XACT	Xilinx	
	XC3000	x	x	x	x	XACT	Xilinx	
	XC40XX	x	x	x	x	XACT	Xilinx	
	XC4000	x	x	x	x	XACT	Xilinx	

FOR ADDITIONAL INFORMATION ON DESIGN TOOLS SEE DESIGN AUTOMATION SECTION

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INTRODUCTION TO CHIP SETS AND MULTIFUNCTION DEVICES

Chip Sets

Many chips are designed from inception as chip sets. When they can be used as stand-alone devices they may be found in other Master Selection Guides. To help point out the interrelatedness of these devices they are repeated and grouped together in this section. They are described anecdotally to help you understand how they “play together”. For each function, the first device listed is the **name** of the chip set and the subsequent device numbers are the components that comprise the chip set. The chip sets are sequenced alphabetically by category, i.e., Communications Chip Sets, Graphics Chip Sets, PC Chip Sets, and then by manufacturer and chip set name.

Multifunction Devices

As the level of chip integration rises, there are some application specific standard parts whose function is so complex that their functions defy easy classification. Yet these are the very parts that are clearly on the leading edge and offer the greatest design advantages. These multifunction devices are grouped by function and have anecdotal descriptions. It's a good idea to browse through this section occasionally for new ideas.

CHIP SETS & MULTIFUNCTION

Function	Device	Source	Line	Function	Device	Source	Line
Bios & Driver				Fax/Modem Chip Set. Has fax capability and high performance (14.4 kbit/s throughput). In addition to handling lower speeds, such as the 1,200 bits/s of the V.22 standard and the 9,600 bits/s of the V.32, V.29 standard for fax transmission is supported. Also supports synchronous modem standards for IBM mainframes and terminals. DSP data-pump is separated into two chips: the PHY10 transmit chip and the PHY11 receive chip. The set also includes a mixed-signal analog front end, the PHY02, which has 13-bit auto-calibrated D/A converters.			
AT BIOS. Includes support for 80286 processor and 80287 math coprocessor operating at clock speeds from 6 MHz to 12 MHz.	OC8220	Chips&Tech		PHY02	Phylon Inc.		20
AT BIOS. Used with CHIPS LeAPset/LeAPset-sx chip set.	OC8223	Chips&Tech		PHY10	Phylon Inc.		
AT BIOS. Used with CHIPS NEAT New Enhanced AT CHIPset.	OC8221	Chips&Tech		PHY11	Phylon Inc.		
AT BIOS for CHIPS SCAT Single Chip AT. Used with CHIPS 82C235 SCAT CHIPset.	OC82C235	Chips&Tech		Universal Modem Engine	< Phylon Inc.		
PS/2 Model 80 BIOS. Used with CHIPS/280 CHIPSet. Fully compatible with the IBM PS/2 Model 80 BIOS. Supports 80386 processor and 80387 math coprocessor operating at clock speeds from 16 MHz to 25 MHz.	OC/280	Chips&Tech	5	IBM 3270 Protocol Controller. The 82C570 is a highly integrated IBM 3270 coaxial type A protocol controller. It serves as an I/O processor to emulate most of the IBM terminals and printers. It works with IBM 3276/3274/3174 control units either locally or remotely attached.	82C570	Chips&Tech	
PS/2 50/60 BIOS. Used with CHIPS/250 CHIPSet. Fully compatible with IBM PS/2 Model 50 and Model 60 BIOS. Supports 80286 processor and 80287 math coprocessor operating at clock speeds from 10 MHz to 25 MHz.	OC/250	Chips&Tech		IBM 3270 Terminal Controller. Highly integrated processor to be used to design 3270 Display Stations such as 3191 and 3192-compatible display terminals.	82C578	Chips&Tech	25
Super VGA BIOS. Used with CHIPS 82C452 Super VGA controller to provide an integrated hardware and software Super VGA solution. Fully compatible with the IBM VGA BIOS.	OC82C452	Chips&Tech		Ku-Band Transceiver. Half-Duplex.	Q5000	Qualcomm	
Super XT BIOS.	OC82C100	Chips&Tech		Controllers			
Super XT BIOS, Enhanced.	OC82C100 +	Chips&Tech		1.8-inch Hard Drive Controller. Combines a Z8-based Zilog microcontroller, a 16-bit digital servo signal processor licensed from Clarkspring Design, Zilog-developed A/D converter technology and a disk controller created by Oak. This packs all the functions of a 1.8-inch drive electronics - except for the commodity memories, read/write channel and servo decoder - onto one die.	86C99 86C99	Oak Technology Zilog	
VGA BIOS for Flat-Panel Displays. Used with CHIPS 82C455 Flat-Panel VGA Controller. Fully compatible with IBM VGA BIOS.	OC82C455	Chips&Tech	10	80188 Family Peripheral Multifunction ASIC. The MS2184 does for embedded controllers what PC-clone chip sets have done for MS-DOS PCs by packing essential embedded controller functions into one highly integrated VLSI chip. The MS2184 replaces several large and expensive MSI chips, decode and glue logic, saving board space, power, and parts cost. It is ideal for embedded control applications. Compatible with the 80188/80186 family of microprocessors (CMOS or NMOS) running at 8 MHz clock frequency. Functional blocks include: Microprocessor Interface, Watchdog Timer, DRAM Control, Dual Serial Ports, LCD Control, Keypad Interface, Printer Control, Speaker Driver, LED Driver, Event Counter, and Delta A/D Converter.	MS2184	Systonix	
VGA BIOS for Flat-Panel Displays. Used with the CHIPS 82C456 Flat-Panel VGA Controller. Fully compatible with the IBM VGA BIOS.	82C456	Chips&Tech		DSP			
VGA Compatible BIOS. Used with CHIPS 82C451 VGA controller to provide an integrated hardware and software solution. Compatible with IBM VGA BIOS.	82C451	Chips&Tech		DaSP/PaC Chipset. Comprises the a66110/a66111 devices which combines arrays of adders, multipliers, and ALUs with applications for Radar, Sonar, Digital Radio, Test Instruments, and Medical Instruments.	DaSP/PaC Chipset	< Array Micro (3382)	
386 BIOS. Optimized, high performance BIOS that is used with the CS8230 AT/386 CHIPSet. Supports 80386 processor and 80387 math coprocessor operating at clock speeds from 16 MHz to 25 MHz.	OC8230	Chips&Tech					
386 BIOS. Used with CHIPS CS8233 PEAKset/386 CHIPSet. Supports 80386 processor and 80387 math coprocessor operating at clock speeds from 20 MHz to 40 MHz.	OC8233	Chips&Tech					
386 Cache-Based BIOS. Used with CHIPS CS8231 AT/386 CHIPSet. Supports 80386 processor and 80387 math coprocessor operating at clock speeds from 16 MHz to 25 MHz.	OC8231	Chips&Tech	15				
386SX BIOS. Used with CHIPS CS8281 NEATsx CHIPSet. Supports 80386sx processor and 80387sx math coprocessor operating at clock speeds from 6 MHz to 20 MHz.	OC8281	Chips&Tech					
Communications							
FAX/Modem. SQ6196 is a Class 2 fax and data modem with Group 3 fax capability at 9,600 bits/s. The caller-ID capability has several options, such as locking or unlocking database access, scrambling and encoding, and other security features.	SQ6196	Sierra					
Fax/Modem Chip Set. Fax Vodem offers integrated fax, data, adaptive differential pulse-code modulation (ADPCM) voice and caller-ID capabilities.	Fax Vodem	Yamaha					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

◊ Surface Mount Package

< Chip Set Name

Bold face indicates additional data is provided on the page noted.

CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
DSP (Cont'd)							
DSP Chip Set. The Digital Array Signal Processor (DASP) (HDSP66110) and the Programmable Array Controller (PAC) (HDSP66210) are the first 1.2 micron CMOS chip set in the HDSP66 family. These devices are optimized for DSP applications based upon the FFT algorithm. The DASP and the PAC implement DSP systems which process data rates up to 100 MHz in real time and perform Discrete Fourier Transforms, spectrum analysis, digital filters, correlations, convolutions and adaptive filters based upon FFT technique. The DASP chip performs about 500 million arithmetic operations per second and operates at an I/O rate of about 5 billion bits per second. Stand-alone DSP systems can be designed by combining the DASP and the PAC with off-the-shelf single-port memories.	DASP/PAC < Signal Proc HDSP66110 Signal Proc HDSP66210 Signal Proc			IBM 8514/A Standard Controller. Boils down the number of chips to just nine to build a complete basic adapter. The 82C480 offers both register and AI compatibility with the IBM 8514/A. The controller can be autoconfigured to tie into either 6- or 8-bit RAMDACs. Also included is a VGA pass-through mode, which allows software to switch the chip so that the VGA controller can send data to the screen.	82C480	Chips&Tech	
Ultra-High Speed DSP Chip Set for Real-Time Applications. Comprises an LH9124 Digital Signal Processor and the LH9320 Address Generator. At 40 MHz, the chip set performs a 1K point complex FFT in 80 microseconds. Multiple units can be cascaded together for even higher performance. The LH9124 is a 24-bit fixed point integer which supports DSP, vector, matrix, logical and arithmetic operations. The LH9320 performs address sequencing and system synchronization for the LH9124. With 20 address bits, the LH9320 can directly address a megaword of memory, permitting either very large transforms (1 M), or support up to 32 channels of significant array size (32K).	LH9124 Sharp LH9124/LH9320 < Sharp LH9320 Sharp		5	IBM 8514/A Standard Controller. Implements 8514/A functionality on a pair of chips. Divides the control tasks into a pixel address manager and a pixel data manager, both housed in 132-lead fine-pitch PQFPs. Independent video and data clocks enable designers to optimize system timing. All software written for the IBM 8514/A adapter will run without change on the controller, but with a 30 to 100% speed improvement. Furthermore, software intended for interlaced monitors will also run on noninterlaced monitors. Includes support of a local EPROM for set-up parameters, 6- or 8-bit RAMDACs, and integrated interfaces for ISA, EISA, and MCA buses.	PWGA1	Western	
FDDI							
FDDI Chip Set. Fiber distributed data interface (FDDI) is a 100-Mbps, fiber-optic-based, token ring LAN standard developed to accommodate rings of up to 1000 stations, 2 km between stations, and 200 km total ring length. FDDI is an American National Standards Institute (ANSI) standard. This standard specifies the media access control (MAC) layer, the physical (PHY) and physical media dependent (PMD) entities, and the station management (SMT) and submanagement physical connection management (PCM). The FDDI chip set consists of four devices. It includes: MC68836 FDDI clock generator; MC68837 elasticity buffer and link manager; MC68838 media access controller; and, MC68839 FDDI system interface.	FDDI < Motorola MC68836 Motorola MC68837 Motorola MC68838 Motorola MC68839 Motorola			IBM 8514/A-Compatible Support Chip. Allows an 8514/A-compatible adapter to be implemented with 9 chips (including memory): 82C480 Graphics Controller, 82B484 Video Support Chip, 74LS245 Bus Transceiver, 1 RAMDAC, LM339 Comparator, 4 256Kx4 VRAMs (minimum), + EPROM (optional).	82B484	Chips&Tech	20
Graphics							
CGA LCD/CRT Controller. The device is designed to drive the following types of panels: single panel, single drive 4-bit parallel; dual panel, single drive 4-bit parallel; dual panel, dual drive 2x4-bit parallel; single panel, single drive 4x3-bit color; and single panel, single drive 1x4-bit color.	82C426	Chips&Tech		PC Graphics Chip Set. Features the ATT20C47XA RAMDACs which are designed to increase speed and reduce power required for D/A conversion of frame buffer images. Comprise ATT20C475A D/A (portable, 6-bit appl.), ATT20C476A D/A (desktop, 6-bit appl.), ATT20C477A D/A (portable, 8-bit appl.), ATT20C478A D/A (desktop, 8-bit appl.), ATT20C458 D/A (workstation, 8-bit appl.), ATT20C491 D/A (true color, 8-bit appl.), and the ATT20C492 D/A (true color, 6-bit appl.).	PC Graphics Chip Set	AT&T	(3389)
CGA LCD/CRT Controller. The 82C425 is a display controller for LCDs and CRTs. It is ideal for portable and laptop computers.	82C425	Chips&Tech		Super-VGA Chip Set. Operates at pixel rates above 70 MHz. Offers Super-VGA resolution as well as a FIFO-buffered 16-bit system bus interface that can adapt to various 256-kbit and 1-Mbit DRAM types. Allows up to 70-Hz refresh for all color modes on a 1024 x 768 display. Chip set comprises ATT20C100 controller, RAMDAC, and ATT20C200 clock synthesizer.	ATT20C100 < AT&T ATT20C200 AT&T		10
Flat Panel Controller. Supplements the 610/620 to improve the image quality of color LCD panels. The chip can take a standard 8-color LCD panel and make it appear as if it had 256 simultaneous colors.	CLDG6340	Cirrus		Super-VGA Controller. Delivers up to 10 times the drawing speed of standard VGA controllers. Incorporates a smart host interface with a deep 32-word by 16-bit FIFO buffer and other logic that improves system throughput. Has clock-generator support, a bit-mapped cursor and hardware control, and expanded DRAM control to handle the 64k-by-16 memories. Dot clock rates of up to 65 MHz are possible. Font widths of 4 or 7 to 16 pixels can be displayed on screens with resolutions of 1024-by-768 or 800-by-600 pixels and 16 colors or 640-by-480 with 256 colors. Up to 4 Mbytes of frame-buffer RAM can be addressed, allowing the chip to handle multitasking video, extended-display modes, and animation.	NCR77C22	NCR	15
Flat Panel Display Controller. Supports 256-color modes and maps those modes to 32 shades of gray. Includes power-management logic and a hardware-assisted cursor. Can scale both text and graphics to fit flat-panel resolution.	CL610 CL620	Cirrus					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

◊ Surface Mount Package

< Chip Set Name

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CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
Graphics (Cont'd)				VGA Controller. Fully Compatible with IBM VGA at hardware, register, and BIOS level. Enhanced backward compatibility with EGA, CGA, Hercules, and MDA without using NMIs. Dual Bus Architecture. Integrated interface to EISA/ISA (PC/AT) and MCA bus (CHIPS/250 and CHIPS/280).	82C451	Chips&Tech	
Super-VGA Controller. Displays up to 256 colors in 800-by-600 pixel images, 16-colors in 1024-by-768 pixel screens, and offers a portrait mode with 4 colors and a 768-by-1024 pixel format. Both interlaced and noninterlaced monitors can be driven with a 65 MHz dot clock.	OTI067	Oak Technology		VGA Controller. Highly integrated design resulting in a lower chip count. Total of 7 chips required for a VGA implementation including memory. Supports two-chip and four-chip memory configurations using 256k x 4 DRAMs. Two DRAMs provide standard VGA modes. Four DRAMs provide extended modes and increased performance.	82C450	Chips&Tech	
Super-VGA Controller. Displays 1024-by-768 pixels with 16 colors either interlaced or noninterlaced using regular DRAMs.	HT208	Headland		VGA Controller. Supports maximum resolution of 1024 x 768 in non-interlaced and interlaced modes. Only requires two 1 MEG DRAMs (64k x 16) for standard VGA modes or four 1 MEG DRAMs for Super VGA modes. Fully compatible with IBM 8514 Standard at Adapter Interface level. Fully Compatible with IBM VGA at hardware, register, and BIOS level. Enhanced backward compatibility with EGA, CGA, Hercules, and MDA without using NMIs. Highly integrated design resulting in lower chip count. Total of 9 chips required for a VGA implementation including memory (64k x 16 DRAMs).	82C452A	Chips&Tech	20
Super-VGA Controller. Displays 256 colors on a 1024-by-768, 800-by-600, or 640-by-480 pixel image. Supports 65 MHz noninterlaced monitors as well as video or DRAMs (including 128k-by-8 deives). Has IBM 3270-compatible text mode.	HT209	Headland		VGA Controller for Non-Flat Panel Applications. Delivers 800-by-600 pixel resolution with 256 colors. Similar to the 610/620, the chips include a hardware-assisted cursor and a 32-bit-wide video memory interface.	CL510A CL520A	Cirrus Cirrus	
Super-VGA Controller. Enhanced version of the WD90C00. Controls up to four DRAMs and displays up to 256 colors in the 800-by-600 pixel mode with either interlaced or noninterlaced monitors.	WD90C11 WD90C12 WD90C20 WD93C10	Western Western Western Western	5	VGA Enhanced Flat Panel/CRT Controller. Supports analog and digital CRT monitors and LCD, Plasma, and Electro Luminescent panels. Up to 64 gray scales on monochrome panels. SMARTMAP intelligent color to grayscale conversion. Text enhancement feature improves contrast on flat panel displays. Advanced SLEEP mode minimizes power consumption.	82C456	Chips&Tech	
Super-VGA Controller. For high performance, the Tseng ET4000 adds support for video RAMs and provides 1024-by-768 pixel displays with 256 colors, or 800-by-600 pixel displays with 65,000 simultaneous colors. Can drive either interlaced or noninterlaced monitors and can improve display speed up to 17-fold over the ET3000A when video RAMs are used.	ET4000	Tseng Labs		VGA Flat Panel Controller Chip Set. Comprises the AVCC advanced video CRT controller and AVPC advanced video panel controller. Supports extended 800-by-600 pixel resolution with 16 colors on either flat panels or CRTs, and up to 1024-by-768 pixels with 16 colors only on CRTs. Uses 16-, 8-, or 4-bit wide DRAMs, and static or pseudo-static RAMs for the video memory. Provide up to 64 gray scales with monochrome displays, and up to 4096 colors with a color LCD panel.	AVCC AVCC/ACPC < Yamaha AVCC/AVPC < Yamaha AVPC Yamaha		25
Super-VGA Controller. Handles complex character sets such as Chinese and Japanese. Handles character font cells up to 24-by-24 pixels in the graphics mode, and 16-by-16 pixels in the text mode.	TBC8900	Trident Micro		VGA Flat Panel/CRT Controller. Supports analog/digital CRT monitors and LCD, Plasma, and Electro Luminescent panels of varying resolutions. Up to 16 gray levels on monochrome panels. SMARTMAP intelligent color to gray level conversion. Advanced SLEEP modes minimize power consumption. Can utilize an external palette DAC with up to 16 million colors. Full backwards compatibility with IBM EGA, CGA, MDA and Hercules graphics standards.	82C455	Chips&Tech	
Super-VGA Controller. Has 800-by-600 pixel 16-color extension.	OTI037	Oak Technology	10	VGA Flat-Panel Controller. Controls LCD, plasma, and EL panels with resolutions ranging from 320-by-200 to 640-by-480 pixels. Up to 16 colors or gray scales can be displayed at maximum resolution.	V6388	Yamaha	
Super-VGA Controller. Operates with up to a 65 MHz dot clock and includes support for nearly all super-VGA modes up to 1024-by-768 pixels with 16 colors, and 800-by-600 pixels with 256 colors, on interlaced monitors. Has hardware zooming to view and alter individual pixels and the ability to simultaneously display up to eight character fonts.	ET3000A	Tseng Labs		Video Controller for Non Flat Panel Applications. Integrates the functions of the 510 and the 520 into one chip and includes some of the glue logic. The 100-lead IC permits a full VGA subsystem with 800-by-600 pixel, 16-color display that's compatible with VESA standards to be constructed with a minimum of seven ICs. The chip employs multiple internal FIFO buffers and a small CPU-to-memory read-write cache to make the DRAM and video-subsystem timing requirements independent of each other.	CLDG5320	Cirrus	30
Super-VGA Controller. Supports 800-by-600 pixel extensions with either video or standard DRAMs.	HT205	Headland					
Super-VGA Controller. Supports 800-by-600 pixel 16-color extension as well as 132-column text modes.	UM587	UTMC					
Super-VGA Controller. With an interlaced or noninterlaced monitors, can display up to 256 colors with resolutions of up to 1024-by-768 pixels. Includes a front-end cache to buffer data transfers for flicker-free display control. Can also drive plasma displays with resolutions reaching 640-by-480 pixels and 16 gray scales.	8900A	Trident Micro					
Super-VGA Controller. Delivers 16 colors for displays of 800-by-600 and 1024-by-768 pixels, and 256 colors for 640-by-400 and 640-by-480 pixels. Operates with a 45-MHz dot clock. FIFO buffers on the video output all the 100-lead chip to buffer video data to ease some of the DRAM timing requirements. Special text modes make it easy to display 132 columns with 25, 43, or 50 rows.	WD90C00	Western	15				
Ultra VGA Graphics Controller. High performance VRAM based VGA optimized 800x600 and 1024x768, 16 and 256 color, display resolutions. 4 VRAMs (256kx4) support all Super VGA modes up to 1024x768 with 16 colors including 800x600 with 256 colors. 8 VRAMs (256kx4) support 1024x768, 256 colors out of 16 million.	82C453	Chips&Tech					
VGA Controller.	82C452	Chips&Tech					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

♦ Surface Mount Package

< Chip Set Name

Bold face indicates additional data is provided on the page noted.

CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
Graphics (Cont'd)				EISA Bus Master interface Controller. Highly integrated Bus Master designed for use in 32-Bit EISA Bus Master expansion board designs. Supports all enhancements defined in EISA specifications required for EISA bus master applications. The BMIC provides a simple, yet, powerful and flexible interface between functions on the expansion board and the EISA bus. With the help of external buffer devices, the BMIC provides all EISA control, address, and data signals necessary to interface to the EISA bus. The primary function of the 82355 is to support 16- and 32-bit burst data transfers between functions on the EISA expansion board and the EISA bus.			
XGA Chip Set. The MCA XGA chip set consists of two chips, the IMS G200 XGA display controller and the IMS G190 XGA serializer palette D/A.	IMSG190 IMSG200 MCA XGA	SGS-Thomson SGS-Thomson < SGS-Thomson			82355	Intel	20
Three chips that control both CRTs and LCD panels form the Dragon chip set. The SPC8000 controller handles the VGA operations, the SPC8010 or 8011 controls the LCD interface, and the SEA6461 RAMDAC ties the SPC8000 into a CRT subsystem. The LCD controller can convert color-palette information into 16 or 64 gray scales. For color LCD panels the SEA6461 RAMDAC is replaced with the SEA6462, and the LCD controller with an additional unit, the SPC 8030. The 8030 can display up to 64 colors with resolutions reaching 800-by-600 pixels.	DRAGON SEA6461 SEA6462 SPC8000 SPC8010 SPC8011 SPC8011 SPC8030	< S-MOS S-MOS S-MOS S-MOS S-MOS S-MOS S-MOS	5	EISA Chip Set. Supports the 33 MHz and 25 MHz 386 CPU or i486 CPU, 82385 Cache Controller, and optional 80387 numeric coprocessor. The EISA chip set contains three chips: 82352- EISA Bus Buffers; 82357- Integrated System Peripheral; and 82358- EISA Bus Controller.	82350 82352 82357 82358	< Intel Intel Intel Intel	
Laser Printer Chip Set. Consists of the VY86C129 Memory Controller and the VY86C429 Laser Printer Interface Chip. When used with the AMD290xx, the chips fully implement the AMDLaser29 board used in embedded laser control applications	VY86C429 VY86C129	VLSI Tech (3745) VLSI Tech (3745)	10	Floppy disk controller.	VL82C110	VLSI Tech	25
LAN				High-Integration Interface Device for 386SX. Used together with the 82230/82231 to provide a cost effective high performance system design solution for AT-compatible 386 SX microprocessor based systems. The DRAM control feature is designed and optimized for the 16 MHz and 20 MHz 386 SX microprocessor bus architecture. The page mode, interleaved memory design allows 0 wait state performance on most memory accesses with 100 ns DRAM at 16 MHz or 80 ns DRAM at 20 MHz. The 82335 SX also provides the necessary interface signals to allow the 387 SX numeric coprocessor to run in a PC/AT system. The 82335 SX with its integrated parity generation and checking provides system designers with data integrity and reliability.			
Bus interface Module.	NCR92C133	◊ NCR			82335SX	Intel	
Ethernet Controller. Combines Nice integrated controller/Endec to an ISA bus interface, pulse-shaping filters and Level-1's 10 Base-T transceiver. Entire system requires only seven chips and supports both twisted-pair and co-ax.	EtherCoupler	Fujitsu	15	High-Integration Interface for 386SX. Used together with the 82230/82231 to provide a cost-effective high performance design solution for AT-compatible 386 SX microprocessor based systems. The 82335 DRAM control feature is designed and optimized for the 16 MHz 386 SX microprocessor bus architecture. The page mode, interleaved memory design allows 0 wait state performance on most memory accesses with 100 ns DRAM. Provides the necessary interface signals to allow the 387 SX numeric coprocessor to run in a PC/AT system. The 82335 with its integrated parity generation and checking provides system designers with data integrity and reliability.	82335	Intel	
IEEE 802.3 Media Access Controller with integrated Manchester Encoder/Decoder.	NCR92C110	◊ NCR		IBM PS/2 Model 30 and Super XT Compatible Chip. The 82C110 is a single chip implementation of most of the system logic necessary to implement a super XT compatible system with PS/2 Model 30 functionality using either an 8086 or 8088 microprocessor. The 82C110 can be used with either 8- or 16-bit microprocessors. The 82C110 includes features which will enable the PC manufacturer to design a super PS/2 Model 30/XT compatible system with the highest performance at 10 MHz zero wait state system with an 8086, the highest functionality with dual clock and 2.5 MB DRAM (with integrated Extended Memory System control logic), the highest integration with the lowest component count SMT design. The 82C110 can be combined with CHIPS' 82C601 Graphics Controller to provide a high performance, high integration PS/2 Model 30 type system.	82C110	◊ Chips&Tech	
IEEE 802.3 Network Management Module.	NCR92C130	◊ NCR					
ISA Slave Host Interface Module.	NCR92C140	◊ NCR					
PC							
AT-SCAT System Controller. Incorporates most of the motherboard logic required to build a low-cost, highly-integrated IBM PC/AT compatible computer. It is designed to be used in conjunction with other CHIPS' controllers such as the 82C451 VGA Controller, the 82C601 Peripheral Controller, and the 82C765 Floppy Disk Controller. When used with these devices, the 82C235 serves as the heart of a highly-integrated system, significantly reducing the system's motherboard size and component count, and the need for many I/O Channel (AT Bus) slots.	82C235	◊ Chips&Tech					
Bus Master MicroCHIP. The 82C614 is a single chip that contains all of the logic required on an adapter card to implement a Bus Master interface to the Micro Channel. It is intended to implement a Bus MAster interface to the Micro Channel. It is intended to give bus mastering capabilities to adapter cards that would normally use the system DMA controller. The advantages of bus mastering vs. standard DMA include faster transfer rates (up to 4 times) and the ability to easily implement 'full duplex' DMA. One of the goals of the 82C614 is to allow adapter card designers to take advantage of the performance improvements offered by bus mastering while remaining cost competitive with standard DMA slave designs.	82C614	◊ Chips&Tech					
Cache controller. SX systems.	VL82C325	VLSI Tech					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

◊ Surface Mount Package

< Chip Set Ne

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CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
PC (Cont'd)							
Integrated Peripheral Controller. The SL9030 replaces two 82C37A Direct Memory Access Controllers, two 82C59A Interrupt Controllers, an 82C54 Programmable Counter, a 74LS612 AT Memory Mapper, two 74ALS373 Octal Three-State Latches, a 74ALS138 3-to-8 Decoder, and other less-complex TTL devices. The SL9030 provides 24 address bits for 16M bytes of DMA address space. It also interfaces directly to the CPU to handle all interrupts. Arbitration between refresh and DMA hold requests are performed by the SL9030.	SL9030	VIA Tech		PC/AT Compatible Chip Set. The CS8220 PC/AT compatible CHIPSet is a 5 chip LSI implementation of most of the MSI/SSI logic used to control the IBM PC AT. The flexible architecture of the CHIPSet allows it to be used in any iAPX 286 based system design. The 82C201 and 82C202 perform the functions of the Intel 82284 Clock Generator and Ready interface, 82288 Bus Controller for iAPX286 processors, 8284A Clock Generator and Driver, and replace 30 other MSI/SSI devices in the IBM PC/AT design. The 82C201 will operate with a system clock frequency of 10 MHz. The 82A203, 82A204, and 82A205 include most of the buffers and drivers required in an IBM PC/AT compatible design.	CS8220 82A203 82A204 82A205 82C201 82C202	< Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech	15
Micro Channel Compatible Peripherals Family. Consists of a complete chip set which can be used to build high performance, 100% Micro Channel compatible motherboard. The 82311 chip set features a highly integrated peripheral bus, and includes the 80277 Single Chip Floppy Disk Controller. The chip set supports 386 systems at 16, 20, and 25 MHz, as well as 386 SX systems at 16 MHz. System components include: 82303- Local I/O Support Chip; 82304- Local I/O Support Chip; 82307- DMA/CACP Controller; 82308- Micro Channel Bus Controller; 82309- Address Bus Controller; and, 82077- Floppy Disk Controller. To implement a minimum configuration Micro Channel compatible motherboard, each of the seven system components listed above are required in addition to the following components: 80386 or 80386 SX microprocessor, TTL buffers for various buses, 8742 keyboard controller, battery-back real time clock with CMOS RAM, serial port, memory, system clock.	82077 82303 82304 82307 82308 82309 82311	Intel Intel Intel Intel Intel Intel < Intel	5	Peripheral Controller. Features two 16450 compatible UARTs, an enhanced parallel port, an IDE hard disk interface and chip selects (MOTHERBOARD mode) or select pins and Game port decodes (ADAPTER mode).	82C601	Chips&Tech	20
Micro Channel Interface. The MicroCHIPS (Micro Channel Interface Parts) family of components integrates most of the interface logic required on an adapter card for the Micro Channel- IBM's high speed bus for its latest generation of PCs. MicroCHIPS provide many benefits of add-in adapters for the Micro Channel: space savings because of the single chip VLSI approach; cost savings because of the integration of many components into one; and time savings because of the ease of design. 82C611 supports multi-function, I/O and memory adapters.	82C611 82C612	Chips&Tech Chips&Tech	10	Peripheral Controller, Universal. Supports ADAPTER applications. Provides one printer port, two 16450 UARTs, IDE AT hard disk interface, floppy disk controller, and one game port chip select.	82C712	Chips&Tech	
Notebook Support Circuits. CHIPSItte is the systems control portion of CHIPS complete solution for the design of portable computers. It consists of two integrated circuits: a memory/bus controller SCAT 82C235, and an Enhanced Power Control Unit, the 82C641. Together, these chips provide memory control, AT bus control, RTC, coprocessor interface and power management functions. Combining CHIPSItte with a CHIPS graphics controller, CHIPS peripheral controller and standard off-the-shelf memory, you can implement a complete laptop with less than 20 ICs (not including memory). For graphics support, CHIPS offers the 82C426 Color Flat Panel/CRT CGA Controller and the 82C456 Enhanced Flat Panel/CRY VGA Controller. For peripheral support CHIPS offers the 82C710 and 82C711 Multifunction Floppy Controllers.	CHIPSItte CS8227 82C641	< Chips&Tech Chips&Tech Chips&Tech		Peripheral Controller, Universal. Single chip controller offering the complete I/P solution for the PC-XT & PC-AT environments. The chip is an LSI implementation of the most commonly used peripheral devices found in an IBM PC, XT or AT. Incorporates 16450 compatible UART, enhanced parallel port, IDE compatible hard disk interface, uPD72065B compatible floppy disk controller, PS/2 type mouse logic, and various chip selects.	82C710	Chips&Tech	
				Power management unit.	VL82C312	VLSI Tech	
				Power Management Unit. The SL9095 is an integrated Power Management Unit (PMU) that minimizes the power consumption and maximizes the battery life in laptop units. The PMU is a single chip addition to the FlexSet PC/AT core logic chip set. The FlexSet provides all of the core logic required for any microprocessor based on the 80286, 80386SX, 80386DX, and 80486. This approach provides minimum chip count, low power dissipation, low cost and maximizes upward design compatibility.	SL9095	VIA Tech	
				PS/2 Model 50/60 Chip Set. CHIPS/250 is a 7-chip, enhanced CMOS implementation of most of the system logic necessary to implement IBM PS/2 Model 50/60 compatible personal computers. CHIPS/250 includes the CS8225 System Logic ChipSet, the 82C607 Multi-Function Controller with an Analog FDC Data Separator and 16550 compatible serial port, and the Enhanced Gate-Level Compatible 82C451 VGA chip. With these 7 VLSI devices, it requires only 61 additional components plus memory to implement superior PCs to IBM's models. The CS8225 System Logic CHIPSet consists of the 82C221 CPU and Micro Channel Controller, the 82C222 Page/Interleave and EMS Memory Controller, the 82C223 DMA Controller, the 82C225 Data/Address Bus Buffer and the 82C226 System Peripheral Controller.	CHIPS/250 82C221 82C222 82C223 82C225 82C226 82C451 82C607	< Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech	25 30

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* BMOD Avail

♦ Surface Mount Package

< Chip Set Name

Bold face indicates additional data is provided on the page noted.

CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
PC (Cont'd)							
PS/2 Model 80 Chip Set. CHIPS/280 is a 7-chip, enhanced CMOS implementation of most of the system logic necessary to implement IBM PS/2 Model 80 compatible personal computers. CHIPS/280 enables OEMs to offer PCs that are more functional, more integrated and higher in performance than IBM's Model 80. CHIPS/280 includes the CS8238 System Logic CHIPSet, the 82C607 Multi-Function Controller with an Analog FDC Data Separator and a NS16550-compatible serial port, and the Enhanced Gate-Level Compatible 82C451 VGA chip. With these 7 VLSI devices, it requires only 66 additional components plus memory to implement superior PCs to IBM's models. The CS8238 System Logic CHIPSet consists of the 82C321 CPU and Micro Channel Controller, the 82C322 Page/Interleave and EMS Memory Controller, the 82C233 DMA Controller.	CHIPS/280 <	Chips&Tech	5	Super XT Compatible Controller. The 82C100 is a single chip implementation of most of the system logic necessary to implement a super XT compatible system with PS/2 Model 30 functionality using either an 8086 or 8088 microprocessor. The 82C100 can be used with either 8- or 16-bit microprocessors. It includes features which enable the PC manufacturer to design a super PS/2 Model 30/XT compatible system with the highest performance at 10 MHz zero wait state with an 8086, the highest functionality with dual clock and 2.5 MB DRAM (with integrated Extended Memory System control logic), the lowest power implementation by utilizing the on-chip power management features and the highest integration with the lowest component count SMT design. The 82C100 can be combined with CHIPS' 82C601 Multifunction Controller to provide a high performance, high integration PS/2 Model 30 type system.	82C100	Chips&Tech	20
	82C223	Chips&Tech					
	82C226	Chips&Tech					
	82C321	Chips&Tech					
	82C322	Chips&Tech					
	82C325	Chips&Tech					
	82C452	Chips&Tech					
	82C607	Chips&Tech					
	82C607	Chips&Tech					
PUMA is a two chip set that allows easy implementation of high-performance/low cost accelerator add-in boards, for both the AT (ISA) and EISA buses. The functionality of such accelerator boards is dynamically programmable, so that one board can be used to accelerate different functions. The PUMA chip set is composed of a microprogrammable processor (PUMA-P) and an AT/EISA bus interface chip (PUMA-I). The F94C2001 PUMP-P is a general purpose microprogrammable coprocessor designed to speed the performance of a number of compute-intensive applications. The F94C2002 PUMA-I provides an ISA/EISA-Bus interface between a high-speed local processor (such as PUMA-P) and host system resources.	CS9421	Chips&Tech	10	The CS8233 PEAK/386 ATchip set is a three chip VLSI implementation of most of the system logic required to implement a cache based iAPX 386DX based system. It is designed to offer a 100% PC AT compatible integrated solution. The flexible architecture of the chip set allows it to be used in any iAPX386DX based design, such as CAD/CAE workstations, office systems, etc. It provides a complete cache based system using only 19 components plus memory devices. The CS8233 PEAK/386 chip set consists of: 82C311-CPU/Cache/DRAM Controller; 82C315- Bus Controller; and, 82C316 Peripherals Controller.	CS8233	< Chips&Tech	25
	F94C2001	Chips&Tech			PEAK	< Chips&Tech	
	F94C2002	Chips&Tech			82C311	Chips&Tech	
	PUMA	< Chips&Tech			82C315	Chips&Tech	
SCAMP controller. 286 systems.	VL82C311L	VLSI Tech	15	The LeAPset CS8223 CHIPSet comprises highly integrated application specific integrated circuits that emulate the control logic of IBM PC AT-compatible computers. Additionally, this chipset provides functions designed specifically for the laptop computer environment. The CS8223 chipset, which supports the 286-microprocessor, comprises the following devices: 82C241- includes a CPU/bus, page/interleave, and EMS memory controller in addition to some laptop control features; 82C242- includes data/address buffers and bus conversion logic; and 82C636- this power control unit controls system power and provides slow refresh DRAM support in standby mode.	82C316	Chips&Tech	30
SCSI Multifunction Device. Supports the following types of interfaces: SCSI Bus; Winchester Disk drives ST506/412, ESDI; and QIC-02 Streaming Tape.	82C5080C	Chips&Tech			CS8223	< Chips&Tech	
Serial Digital Video (D1/D2) Cable Driver. Monolithic chip designed to drive 75-ohm cables to SMPTE/EBU serial digital signal standards. It interfaces directly with the GENLINX GS9002 encoder.	GS9007	Gennum (3496)			LeAPset	< Chips&Tech	
Serial Digital Video (D1/D2) Decoder. Monolithic chip designed to decode SMPTE/EBU serial digital signals. Performs the functions of data descrambling, serial to parallel conversion, frame synchronization and automatic D1/D2 selection. It interface directly with the GENLINX GS9005 Receiver and the GENLINX GS9001 Ancillary Data Processor.	GS9000	Gennum (3496)			82C241	Chips&Tech	
Serial Digital Video (D1/D2) Encoder. Monolithic chip designed to encode SMPTE/EBU serial digital signals. Performs the functions of data scrambling, parallel to serial conversion, data and clock synchronization and parallel clock to serial clock conversion. It interfaces directly with the GENLINX GS9007 Cable Driver and the GENLINX GS9003 Processor.	GS9002	Gennum (3496)			82C242	Chips&Tech	
Serial Digital Video (D1/D2) Receiver. Monolithic chip designed to recover SMPTE/EBU serial digital signals. Performs the functions of automatic cable equalization, data recovery and clock recovery. It interface directly with the GENLINX GS9000 decoder.	GS9005	Gennum (3496)			82C636	Chips&Tech	
					AT40381	ATMEL	
					AT40382	ATMEL	
					80386DX	< ATMEL	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

◊ Surface Mount Package

< Chip Set Name

Bold face indicates additional data is provided on the page noted.

CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
PC (Cont'd)				286/386SX Chip Set. Optimized two chip design and packaging solution for 286 and 386 based systems. Up to 25 MHz system clock speeds. Sleep modes support low-power and laptop designs. Full LIM EMS 4.0 specification over entire 32 MByte memory map. Built-in three state control for board level testing. Programmable DRAM and slot interface drive optimizes system for actual load conditions.			
The 82230 and 82231 are a two-chip implementation of LSI/MSI/SSI logic controlling the IBM Personal Computer AT. The devices provide a low power, highly integrated PC-AT design solution that may be applied to any 80286-based system. The 82230 performs the functions of the 82284 Clock Generator & ready interface, 82288 Bus Controller for 80286 processors, 6818 Real Time Clock/RAM, and the Master-Slave implementation of the dual 8259A Programmable Interrupt Controllers, as well as the Command Delay, Shut Down, Address/Data Bus Control and ready Generation logic. The 82231 includes the 8254 Programmable Interval Timer, 8284A Clock Generator, LS612 Memory Mapper and the dual 8237 DMA Controller functions as well as Refresh Generation and Refresh/DMA Arbitration Logic.	82230	Intel		TOPCAT 286/386 < VLSI Tech VL82C286-SET < VLSI Tech VL82C320-FC VLSI Tech			15
Universal PC/AT Clock. The SL9092 is a universal System Clock Chip capable of generating all essential clock signals that are used in typical PC and laptop designs. This device can support 8086, 8088, 80286, 80386SX, 80386DX and 80486 microprocessor based designs. The CPUCLK outputs of this chip are programmable through the keyboard or by jumper settings. Clock options of 66 MHz, 64 MHz, 50 MHz, 48 MHz, 40 MHz, 32 MHz, and 24 MHz are available, as well as the resultant frequencies from dividing these signals by 2 or 4, giving flexibility to the user.	82230/82231 82231 82330/82231	< Intel Intel < Intel		386/AT Chip Set. The CS8330-16,20,25 AT/386 chip set is a seven chip VLSI implementation of most of the system logic to control iAPX 386 based system. The chip set is designed to offer a 100% PC/AT compatible integrated solution. CS8230 chip set combined with CHIPS 82C206 Integrated Peripherals Controller, provides a complete PC/AT compatible system using only 40 components plus memory devices. The CS8230 chipset consists of one 82C301 Bus Controller, one 82C302 Page/Interleave Memory Controller, one each of 82A303 and two 82B305 Data Bus Interfaces, and a 82A306 Control Signal Buffer.	CS8230 82A303 82A304 82A306 82B305 82C301 82C302 82C303	Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech	20
Universal PC/AT Clock Chip. Capable of generating all essential clock signals that are used in a typical P.C. design. This device can support 8086, 8088, 80286, 80386SX, 80386DX and 80486 microprocessor based designs. The outputs of this clock chip are programmable through the keyboard and also by jumper settings. Clock options of 66 MHz, 50 MHz, 48 MHz, 40 MHz, 32 MHz, and 24 MHz. Multiplies are available, giving flexibility to the user.	SL9092	VIA Tech	5	386/AT Turbo Cache-Based Chip Set. The CS8231 is a seven chip VLSI implementation of most of the system logic to implement a cache based iAPX386 based system. The CS8231 chip set combined with CHIPS' 82C206 Integrated Peripherals Controller, provides a complete PC/AT compatible system using only 40 components plus memory devices. The chip set consists of one 82C301 Bus Controller, one 82C307 Integrated CACHE/DRAM controller, one each of 82A303 and 82A304 Address Bus Interfaces, two 82B305 Data Bus Interfaces, and one 82A306 Control Signal Buffer.	CS8231 82A303 82A304 82B305 82C301 82C307	< Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech Chips&Tech	25
V30-Based Palm-Top ASIC. The DOS Engine is a sea-of-gates design that includes the V30 CPU core, relatively complete PC core logic, and a keyboard controller in one package. Aimed at palm-top applications, the chip hits 8 MHz at 3V and 16 MHz at 5V. It provides almost everything needed except a real-time clock and peripheral controllers.	SL9090A	VIA Tech		386DX Chip Set. Optimized three chip design and packaging solution for 386DX based systems. Up to 33 MHz system clock speeds. Sleep modes support low-power and laptop designs. Full LIM EMS 4.0 specification over entire 32 MByte memory map. Built-in three-state control for board level testing. Programmable DRAM and slot interface drive optimizes system for actual load conditions.	TOPCAT 386DX < VLSI Tech VL82C330-FC VLSI Tech VL82C331-FC VLSI Tech VL82C331-FC VLSI Tech VL82C332-FC VLSI Tech VL82C386-SET < VLSI Tech		30
Single chip controller offering complete I/O solution for the PC-XT & PC-AT environments. Supports MOTHERBOARD applications. Provides one enhanced parallel port, two 16450 UARTs, one IDE XT/AT hard disk interface and floppy disk controller.	DOS Engine	NEC		386DX Chip Set. The CS82310 PEAKset DM chip set is a three chip VLSI implementation of the systems logic required to implement a cache-based 386DX system. It provides a complete cache based 386/AT system using only 19 components plus memory devices. The chip set consists of one 82C351 CPU/CACHE/DRAM controller, one 82C355 Data Buffer, and one 82C356 Peripherals Controller.	CS82310 PEAKset DM < Chips&Tech 82C351 < Chips&Tech 82C355 Chips&Tech 82C356 Chips&Tech		35
286 Chip Set. The CS8221 PC/AT compatible NEAT CHIPSet is an enhanced, high performance 4 chip VLSI impelmentation (including the 82C206 IPC) of the control logic used on the IBM PC/AT. The flexible architecture of the NEAT CHIPSet allows it to be used in any 80286 based system. Supports 16 MHz 80286 operation with only 0.5-0.7 wait states for 100ns DRAMs and 12 MHz operation with 150ns DRAMs, 0 wait state 12 MHz operation with 80ns DRAMs.	82C711	Chips&Tech					40
	CS8221	< Chips&Tech	10				
	NEAT CHIPSet	< Chips&Tech					
	82C211	Chips&Tech					
	82C215	Chips&Tech					

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

* Typical Value

* BMOD Avail

♦ Surface Mount Package

< Chip Set Name

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CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
PC (Cont'd)							
386SX Chip Set. Consists of OTI041 System Controller, OTI042 Peripheral Controller, and OTI043 VGA Display Controller. Can be used with 286 or 386SX CPU.	NOTEBOOK	< Oak Technology		486 Multi-Processor Platform. The M/PAX (Multi-Processor Architecture Extension) architecture provides a platform for symmetrical multi-processing. The CS9239 CHIPSet is a specific implementation of the M/PAX architecture that supports up to six 80486 or other CISC or RISC processors connected to memory and I/O resources via a wide, non-multiplexed, multi-master Multi-Processor Interface (MPI) bus.	CS9239	< Chips&Tech	
	OTI041	Oak Technology					
	OTI042	Oak Technology					
	OTI043	Oak Technology					
386SX Chip Set. LeAPset-SX CS8283 supports the 80386SX. It works together with the 82C601 Multifunction Controller, the 82C455 Flat Panel/CRT VGA Controller, and the 82C456 Advanced Flat Panel/CRT Controller. Using the LeAPset solution, a complete laptop motherboard requires a total of only 29 ICs plus memory. Four chips are included in the LeAPset system controller circuits: 82C242 data/address buffers and bus conversion logic, the 82C636 Power Control Unit, and the 82C206 Integrated Peripheral Controller, and the 82C841 CPU controller is contained in the CS8283.	CS8283	< Chips&Tech	5	486/386 Chip Set. Haydn family is comprised of the SL82C460 chip set for 486-based PC/AT-compatible systems and SL82C360 chip set for 386-based PCs. Each of these chip sets includes two devices: a system controller and a bus controller. An optional cache controller chip can be added if cache capability is required. A complete motherboard can be created with as few as eight active components (less memory) including CPU, keyboard controller, real-time clock, BIOS ROM, two TTL devices and Symphony's two device chipset. All devices operate at 50 MHz and beyond as well as the standard speeds of 16, 20, 25, 33 & 40 MHz.	Haydn	< Symphony Lab	25
	LeAPset-SX	< Chips&Tech			SL82C360	Symphony Lab	
	82C242	Chips&Tech			SL82C460	Symphony Lab	
	82C636	Chips&Tech					
	82C841	Chips&Tech					
386SX Chip Set. The CS8281 NEATsx chip set is an enhanced, high performance 4 chip VLSI implementation of the control logic to build PC/AT compatibles based on the 386SX microprocessor. NEATsx provides a complete 386SX AT system board with 24 components plus memory devices. The CS8281 NEATsx chip set consists of the 82C811 CPU/Bus controller, the 82C812 Page Interleave/EMS memory controller, the 82C215 Data/Address buffer and the 82C206 Integrated Peripheral Controller.	CS8281	< Chips&Tech	10	80286 Chip Set. The ELEAT chip set provides the designer a low cost solution for an entry level IBM PC/AT compatible system complete with 12 MHz 80286 CPU interface, VGA graphics, serial and parallel communications, floppy disk controller, 16-bit IDE hard disk interface, and system software. System implementation requires as few as 43 components plus system memory. The system comprises an 82C235 System Controller, and 82C451 VGA controller, and an 82C710 that includes an integrated floppy disk controller, IDE hard disk interface, serial port, parallel port, and PS/2 style mouse port. The CB8291 System/VGA BIOS is integrated into a single module.	CB8291	< Chips&Tech	30
	NEATsx	< Chips&Tech			ELEAT	< Chips&Tech	
	82C206	Chips&Tech			SYSTEM BIOS	Chips&Tech	
	82C206	Chips&Tech			82C235	Chips&Tech	
	82C206	Chips&Tech			82C235	Chips&Tech	
	82C215	Chips&Tech			82C451	Chips&Tech	
	82C811	Chips&Tech			82C710	Chips&Tech	
	82C812	Chips&Tech					
386SX Notebook Support Circuit. CHIPSlate is the systems control portion of CHIPS complete solution for the design of portable computers. It consists of two integrated circuits: a memory/bus controller SCAT 82C836, and an Enhanced Power Control Unit, the 82C641. Together, these chips provide memory control, AT bus control, RTC, coprocessor interface and power management functions. Combining CHIPSlate with a CHIPS graphics controller, CHIPS peripheral controller and standard off-the-shelf memory, you can implement a complete laptop with less than 20 ICs (not including memory). For graphics support, CHIPS offers the 82C426 Color Flat Panel/CRT CGA Controller and the 82C456 Enhanced Flat Panel/CRY VGA Controller. For peripheral support CHIPS offers the 82C710 and 82C711 Multifunction Floppy Controllers.	CHIPSlate-SX	Chips&Tech	15	80386DX/SX Chip Set. The Flex 1 100% PC/AT compatible chip set includes all of the core logic for the 80386DX or 80386SX PC/AT systems. The Flex 1 chip set consists of the SL9011 System Controller, the SL9020 Data Controller, the SL9025 Address Controller and the SL9X5X Memory Controller.	FLEX1	< VIA Tech	35
	CS82C836	Chips&Tech			SL9X5X	VIA Tech	
	CS8288	< Chips&Tech			SL9011	VIA Tech	
	82C641	Chips&Tech			SL9020	VIA Tech	
					SL9025	VIA Tech	
486 Chip Set for Micro Channel. Hardware and software compatible with IBM's Micro Channel, the chip sets consist of five components, including a direct memory access (DMA) controller, two address/data buffers, memory/bus controller and peripheral support chip. The SLIKM-486-2 supports 33 MHz 80486 and provides 40 MBytes/s of maximum data streaming between the main memory and peripherals.	SLIKM486-2	Toshiba	20	80386DX System & Memory Controller. Has the logic for the System Control, Memory Control, Data Control and chip select for some of the peripherals used in an AT system. The device is fully configurable via software. No external hardware jumpers are needed to utilize its features. Default values are provided to boot any system configuration. On reset, BIOS routines are used to program the device, transparent to the user, to utilize its special features.	SL9352	VIA Tech	40
	SLIKM486-3	Toshiba					
486 Chip Set for Micro Channel. Hardware and software compatible with IBM's Micro Channel, the chip sets consist of five components, including a direct memory access (DMA) controller, two address/data buffers, memory/bus controller and peripheral support chip. The SLIKM-486-2 supports 33 MHz 80486 and provides 40 MBytes/s of maximum data streaming between the main memory and peripherals.	SLIKM486-2	Toshiba		80386SX Chip Set. The ELEATsx chip set provides the designer a low cost solution for an entry-level IBM PC/AT compatible system complete with a 16/20/25 MHz 3086SX CPU interface, VGA graphics, serial and parallel communications, floppy disk controller, 16-bit IDE hard disk interface, and system software. System implementation requires as few as 37 components plus system memory. The chip set comprises a 82C836 System Controller, an 82C450 VGA Controller, an 82C711 that includes an integrated floppy disk controller, IDE hard disk interface, two serial ports, and one parallel port. The CB8295 System/VGA BIOS is integrated into a single module.	CB8295	Chips&Tech	
	SLIKM486-3	Toshiba			ELEATsx	< Chips&Tech	
					82C450	Chips&Tech	
					82C711	Chips&Tech	

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

*BMOD Avail

◊ Surface Mount Package

< Chip Set Name

Bold face indicates additional data is provided on the page noted.

CHIP SETS & MULTIFUNCTION (Cont'd)

Function	Device	Source	Line	Function	Device	Source	Line
PC (Cont'd)							
80386SX Chip Set. The ELEATsx chip set provides the designer a low cost solution for an entry-level IBM PC/AT compatible system complete with with a 16/20/25 MHz 3086SX CPU interface, VGA graphics, serial and parallel communications, floppy disk controller, 16-bit IDE hard disk interface, and system software. System implementation requires as few as 37 components plus system memory. The chip set comprises a 82C836 System Controller, an 82C450 VGA Controller, an 82C711 that includes an integrated floppy disk controller, IDE hard disk interface, two serial ports, and one parallel port. The CB8295 System/VGA BIOS is integrated into a single module.	82C836 82C836	Chips&Tech Chips&Tech	(Cont'd)	SAA7192 SAA7197 SAA9065 TDA4680 TDA8708	Signetics (3628) Signetics (3628) Signetics (3628) Signetics (3628) Signetics (3628)		20
80386SX Chip Set. The PEAKset-sx chip set supports high performance 80386SX cache system designs. The highly integrated solution has all the necessary logic needed to implement a 20MHz 386SX motherboard solution with only 2 VLSI devices. The chip set consists of the 82C836 Single Chip AT (SCATsx) and the highly integrated 82C835 Cache Controller. This high level of integration and unified cache allow designers to take full advantage of the 386SX performance at speeds of 20 MHz and beyond.	CS8285 PEAKset-sx 82C835	< Chips&Tech < Chips&Tech Chips&Tech		Workstation			
80386SX Micro Channel Chip Set. Supports the 80386SX 32-bit microprocessor at 25 MHz. Consists of two components, including the system controller and a peripheral support chip. A 16-bit Micro Channel computer can be built with less than 30 ICs.	SLIKM386SX-1	Toshiba		RISC-PC chipset devices includes: LR3201 Reset/Interrupt Controller; LR3202A L-Bus Controller; LR3203 DRAM Controller; LR32D04 DRAM Data Buffer; LR3205 Block Transfer Buffer; and, LR3208 Video Frame Buffer.	LR32D04-25 LR3201-25 LR3202A-25 LR3203-25 LR3205-25 LR3208-25 MipSET	o† LSI Logic (3567) o† LSI Logic o† LSI Logic o† LSI Logic o† LSI Logic o† LSI Logic < LSI Logic	25
80386SX System & Memory Controller. The SL9252 has the logic for the System Control, Memory Control, Data Control and chip select for some of the peripherals used in an AT system. The device is fully configurable via software. No external hardware jumpers are needed to utilize it features. Default values are provided to boot any system configuration. On reset, BIOS routines are used to program the device, transparent to the user, to utilize its special features.	SL9252	VIA Tech		SCSI Multifunction Device. Supports the following types of interfaces: SCSI Bus; Winchester Disk drives ST506/412, ESDI; and QIC-02 Streaming Tape.	82C5080C	Chips&Tech	30
8086 Subsystem. Combines 8086-like processor, core logic, I/O and CGA controller one one die.	PC/Chip	Chips&Tech		SPARCstation 2 Chipset. 40 MHz version of chip set for Sun Microsystems SPARCstation 2. Includes the L64841 enhanced memory management unit, the L64844 enhanced cache controller, and the L64846 DRAM controller. The chipset is augmented by LSI Logic's L64811 integer unit, L64814 floating point unit and L64853A DMA controller. The six integrated circuits support the data storage and computational requirements of workstations, servers and specialized peripherals used in engineering and scientific applications.	L64841 L64844 L64846 SparKIT-40/SS2	LSI Logic (3569) LSI Logic (3569) LSI Logic (3569) < LSI Logic	
Video							
Color Space and Raster/Block Converter.	L64765	LSI Logic					
Consumer Video Chip Set. Features color video decoding, 13.5MHz, 720 pixels/line, 7 bits Y:U:V 4:1:1, PAL, NTSC. Comprises TDA8708 A/D (source, select, clamp, AGC, A/D), SAA7191 DMSP (luma, chroma processor, synch and clock processor), SAA7197 CGC (clock generator circuit), SAA9065 DVP (digital filters and 3 D/As), and TDA4680 AVP (analog matrix and video switch).	Consumer Video Chip Set SAA7191 SAA7197 SAA9065 TDA4680 TDA8708	< Signetics (3629) Signetics (3629) Signetics (3629) Signetics (3629) Signetics (3629)	10				
Desktop Video Chip Set. Features color video decoding and square pixels. NTSC: 12.272727MHz, 640 pixels/line. PAL, SECAM: 14.75MHz, 768 pixels/line. 8 bits Y:U:V 4:2:2. Comprises TDA8708 A/D (source, select, clamp, AGC, A/D), SAA7191 DMSP (luma, chroma processor, synch and clock processor), SAA7197 CGC (clock generator circuit), SAA7192 DCSC (upsample, YUV to RGB, inverse gamma), SAA9065 DVP (digital filters and 3 D/As), and TDA4680 AVP (analog matrix and video switch).	Desktop Video Chip Set SAA7191	< Signetics (3628) Signetics (3628)	15				

† Mil Temp Range (-55° to 125°C)

‡ High Rad Resistance

*Typical Value

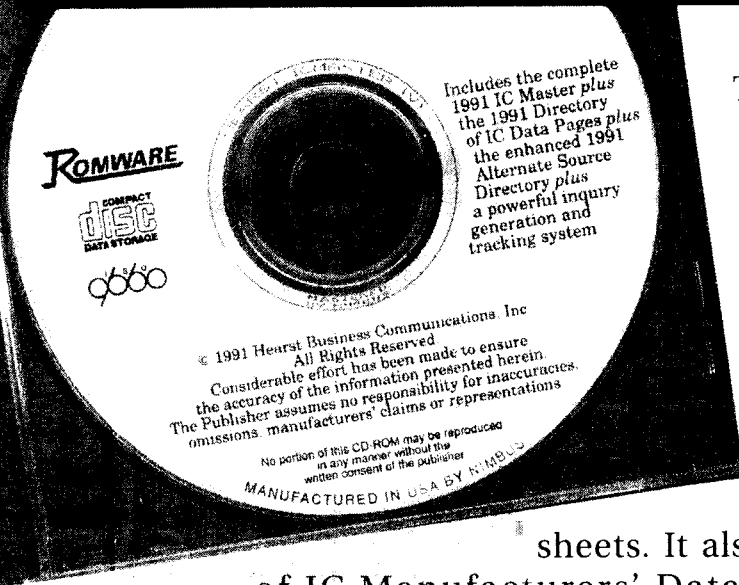
*BMOD Avail

o Surface Mount Package

< Chip Set Name

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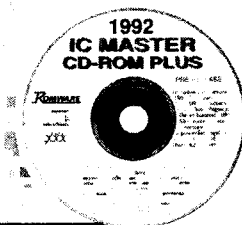
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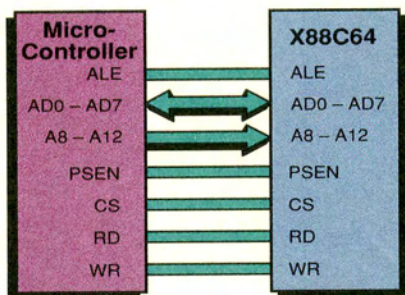
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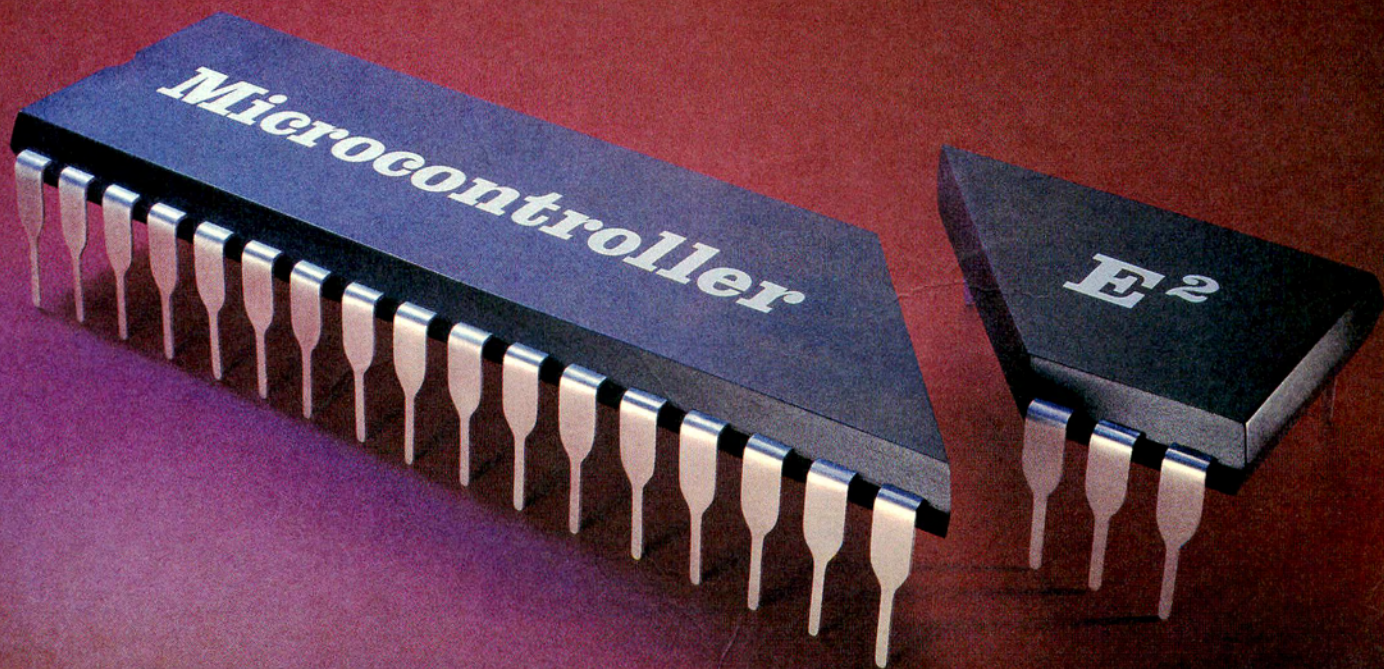
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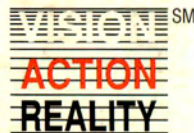


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